

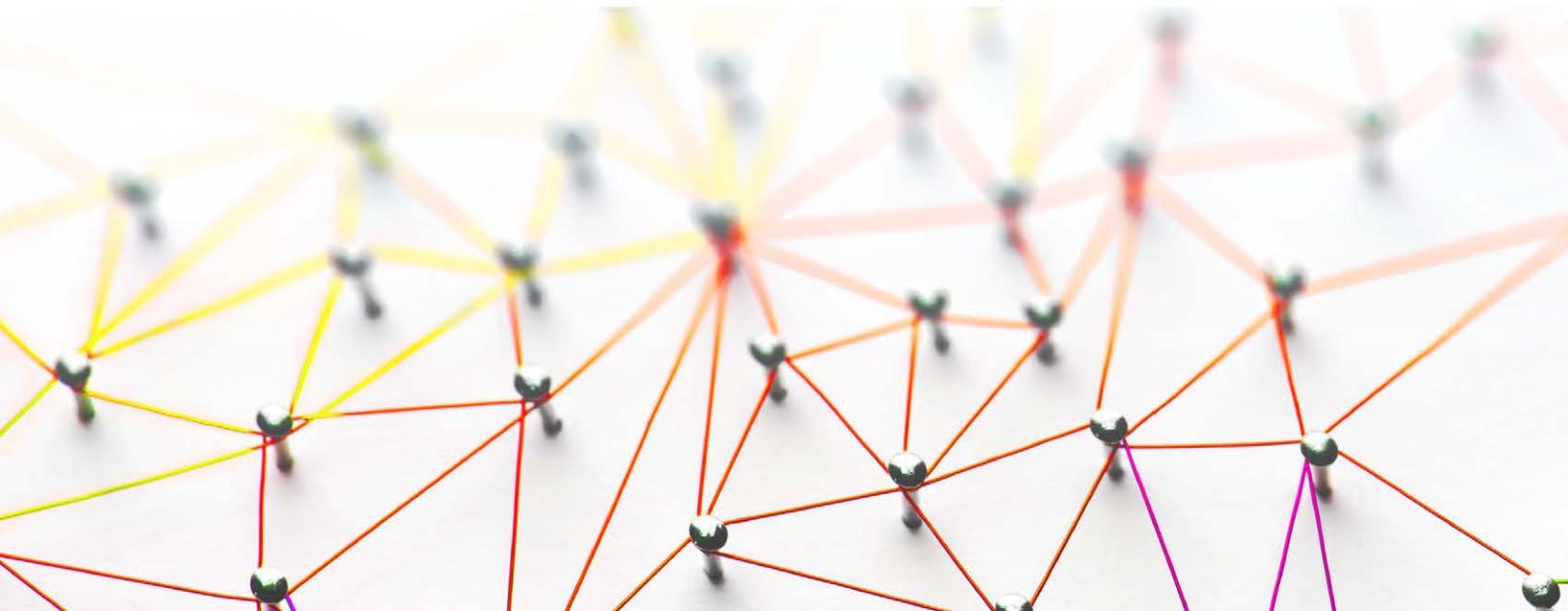


#LWL

Links We Like

A Compilation of 40 Editions

2015-2022



Links We Like explores cutting-edge issues related to DPA's work by gathering articles, reports, podcasts, events and other resources to provide a deeper understanding of the data and technology shaping our world.

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Links We Like Turns 40!

Technically, Links We Like (LWL) has been around for seven years, and in that time we have produced 40 editions, all of which are compiled here in a downloadable PDF form. LWL began in 2015 as a way for us to take stock of the debates and conversations around the data landscape, as well as to share interesting and noteworthy links related to our scope, which at the time was focused largely on “Data Ethics and Literacy”, “Climate Change and Resilience”, and “Politics and Governance”. This was a more general approach, which is evident as editions 1 through 13 do not have a specific title. As our organization (and scope of work) grew, so did LWL. In its current form, each edition covers one topic (e.g., agriculture, crime, medicine) and explores how various frontier technologies (e.g., AI, ML) and data are impacting the field. Occasionally, we will also address especially newsworthy topics, such as the Facebook whistleblower or algorithmic justice. We do this by offering an introduction that covers key debates, followed by a series of curated links and descriptions (articles, projects, books, podcasts, and much more) selected by our team to fully explore the topic at hand in an interesting and accessible manner.

Today, the goal behind producing LWL is two-fold. The first is to create a useful resource for researchers, practitioners, or anyone interested in how data and technology are impacting our world, as well as to identify knowledge gaps and challenges ahead. The second, more overarching goal is part of our mission to “change the world with data”, one facet of which is synthesizing the vast ocean of data that exists into something resembling a short “story” that will resonate with our readers.

Ultimately, we produce these pieces for you, our reader. Therefore, we would love to hear from you about a topic you would like to see covered or suggestions to help us improve this valuable resource (contact@datapopalliance.org).

Thanks for reading, and enjoy our first 40 editions of Links We Like!

TIP!

Use the search function to find more information about a topic you're interested in. We have covered a vast range of topics, from agriculture to zika; from blockchain to open source; from crime to migration.

 Agriculture

 Migration

 Crime

 Zika

Links We Like #1

Publication Date:
December 22, 2015



Here's a quick compilation of a few links we like and want to share with you:

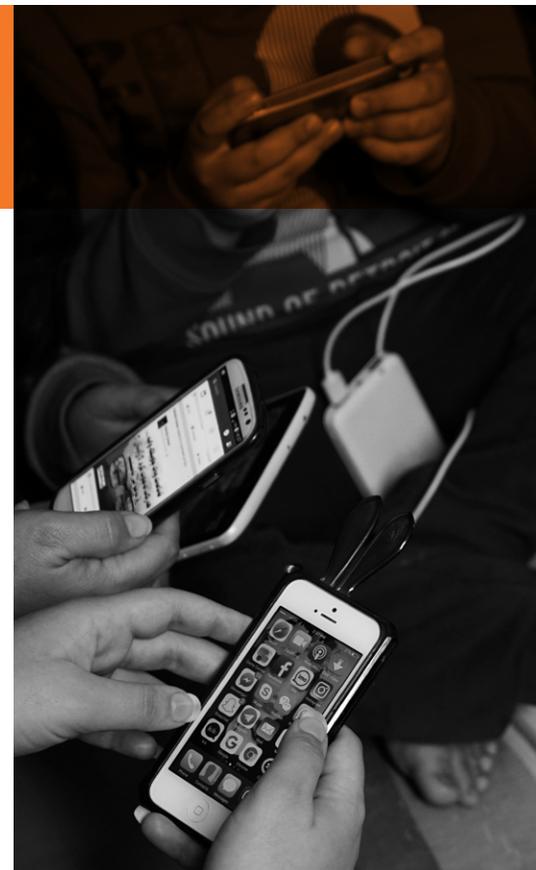
1. Compelling article by Charles Kenny of The Atlantic :[2015 :The Best Year in History for the Average Human Being](#) .“Violence dominated the headlines this year .But by many measures ,humanity is in better shape than it’s ever been .
2. Jeffrey Sachs writes for The Boston Globe about COP21: [“The Paris agreement, diplomacy, and the common good”](#). In the end, it’s all about diplomacy.
3. When something is free, it means you’re the product. TechStuff’s podcast on [“The Evils of Data Tracking”](#). Codebreaker’s Ben Johnson joins the show to talk about data tracking. What is it used for? What’s the best case scenario? And what happens when it goes wrong?
4. Test your SDG knowledge with this online quiz from The Guardian: [“Sustainable development quiz: what do you know about the global goals?”](#)
5. On archive capacities for local and cloud data storage by Tom Coughlin for Forbes: [“Storage for the Next 5,000 Years”](#).
6. “Developed” and “Developing” classifications going out of style? [“Is the term ‘developing world’ outdated?”](#) by Tariq Khokhar and Umar Serajuddin for the World Economic Forum.
7. New York City amasses data on habits, health, and security of its citizens to cope with spiraling growth. [“As World Crowds In, Cities Become Digital Laboratories”](#) by Robert Lee Hotz for The Wall Street Journal. Across hundreds of wavelengths of light, they are recording the rhythmic pulse of a living city, just as astronomers capture the activity of a variable star.

Links We Like #2

Publication Date: January 5, 2016

Here's a quick weekly compilation of a few links we like and want to share with you:

1. Could consumers sell access to their own encrypted data? It looks that way. [“MIT’s New Blockchain Project Enigma Wants to Let You Share Your Data on Your Own Terms,”](#) by Steven Melendez for FastCompany. Our Academic Director, Alex “Sandy” Pentland is helping with the Enigma project.
2. [“Who controls your Facebook feed?”](#) by Will Oremus for Slate. “...and yet the results of this automated ranking process shape the social lives and reading habits of more than 1 billion daily active users—one-fifth of the world’s adult population.”



- 22 U.S. cities are compared on their quantity and quality of data that they are making publicly available online, in an article written by Jeff Asher for FiveThirtyEight, [“Which cities share the most crime data?”](#)
- Did you know? On average, life expectancy at birth is four years longer for women than for men. And from 2000 to 2013, life expectancy at birth increased by an average of three years for both genders. Check out The World Bank’s [The Little Data Book on Gender 2016](#).
- [“Big Data and computational medicine: Who guards the data?”](#) by Jessica Hall. “Big Data offers unprecedented perspective, far beyond the scope of what any researcher has done before.”
- Malware may have been used to cause a power outage at 3 locations in Ukraine, including leaving half the homes in one region with no electricity: [“First known hacker-caused power outage signals troubling escalation”](#) by Dan Goodin for Ars Technica.

Links We Like #3

Publication Date: February 4, 2016

Check out our weekly compilation of the links we like and want to share with you:

Peacebuilding and Violence

- [Five Ways Tech is Crowdsourcing Women’s Empowerment](#) - *Zara Rahman, the engine room (@zararah)*

As more women’s rights activists turn away from institutional datasets and instead rely more heavily on their own data, new opportunities arise in the fight against gender discrimination. The author describes five examples that echo the trend of technology as a means of data contribution by women’s rights activism around the world.

Data Ethics and Literacy

- [EDPS Starts Work on a New Digital Ethics](#) - *European Data Protection Supervisor (@EU_EDPS)*

The European Data Protection Supervisor (EDPS) recently has announced the launch of an Ethics Advisory Group, which will address how the EU and other nations may embrace the benefits of technological innovations while maintaining citizen rights. The group will be publishing summaries of their work periodically, which will be made public.

- [African Refugees in South Africa Are Often Unable to Access Their Rights](#) - *Roni Amit, African Centre for Migration & Society at University of the Witwatersrand*

As part of the London School of Economics’ African Perspectives on Migration, this article explains the current challenge facing refugees and asylum seekers



in South Africa. Despite the fact that South Africa holds one of the world's most progressive legislation on refugees, the rights of refugees has been restricted as refugees are blamed for the socioeconomic issues that have spread throughout the country.

Politics and Governance

- [Opening Governance](#) - *Institute of Development Studies (@IDS_UK)*
What does it mean for a government to be "open"? This January bulletin produced by the Institute of Development Studies compiles an array of literature that discusses what makes a governance open, effective, and accountable through frameworks and good practices and discusses the challenges of and limitations to effectiveness.
- ["Don't Panic" Making Progress on the "Going Dark" Debate](#) - *The Berkman Center for Internet & Society's Berklett Cybersecurity Project*
Berklett Cybersecurity Project is a coalition of security and policy experts that analyze and address the U.S. government's responsibilities in promoting cybersecurity. The report explores the challenge of data encryption and its effect on impeding effective government surveillance and cybersecurity.
- [Statement of the Article 29 Working Party on the Consensus of The Schrems Judgment](#) - *Article 29 Working Party*
In response to the recent introduction of the "EU-U.S. Privacy Shield," the Article 29 Data Protection Working Party (WP29) of the European Commission clarifies its plans to assess the new framework for data transfer in the coming weeks.

Links We Like #4

Publication Date: February 11, 2016

Politics and Governance

- [Bittersweet Mysteries of Machine Learning \(A Provocation\)](#) - *Frank Pasquale, London School of Economics and Political Science Media Policy Project Blog (@FrankPasquale)*
Pasquale describes the complex issues surrounding algorithmic accountability and machine learning. In considering the prevalence of computational reasoning in today's society, it is important that we determine how and which algorithmic systems should be subjected to human decision-making and oversight.
- [World's Biggest Democracy Stands Up for Net Neutrality](#) - *World Wide Web Foundation (@webfoundation)*
India has just passed clear net neutrality rules, "Prohibition of Discriminatory Tariffs for Data Services Regulations," that will outlaw zero rating of specific services. Advocating for the free and open Internet, the regulations will encourage true digital equality.



- [Anonymous Targets African Governments Against Corruption](#) - *Carolina, HackRead (@hackread)*

Hackers from the online hacktivist Anonymous have recently begun targeting African governments in protest of increased corruption. The hackers demand an end to the corruption, and will continue to leak confidential and sensitive information until the governments cooperate.

PeaceBuilding and Violence

- [Are You Really Listening? How Feedback Mechanisms Work \(Or Not\) In Insecure Environments](#) - *Lotte Ruppert & Elias Sagmeister, The Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) (@ALNAP)*

This article describes the results of a 3 year study by the SAVE research project, which sought to better understand and improve aid delivery to insecure environments. The research provides valuable insights into formal and informal feedback mechanisms used by aid agencies and the challenges they face in trying to address the issues reported by communities receiving aid.

Climate Change and Resilience

- [An Open Guide to Zika Data](#) - *Erin Kissane & Jeremy Singer-Vine, Source (@kissane) (@jsvine) (@source)*

Jeremy Singer-Vine of BuzzFeed has recently started an open-sourced project for Zika-related data in order to accumulate data about the epidemic and related challenges. The project hopes to attract a diverse audience that may be able to work collaboratively on translating the data into open structured data.

Data Ethics and Literacy

- [CognitiveLogic raises \\$3M to Help Enterprises Pool Big Data While Keeping Privacy Intact](#) - *Ingrid Lunden, Tech Crunch (@ingridlunden)*

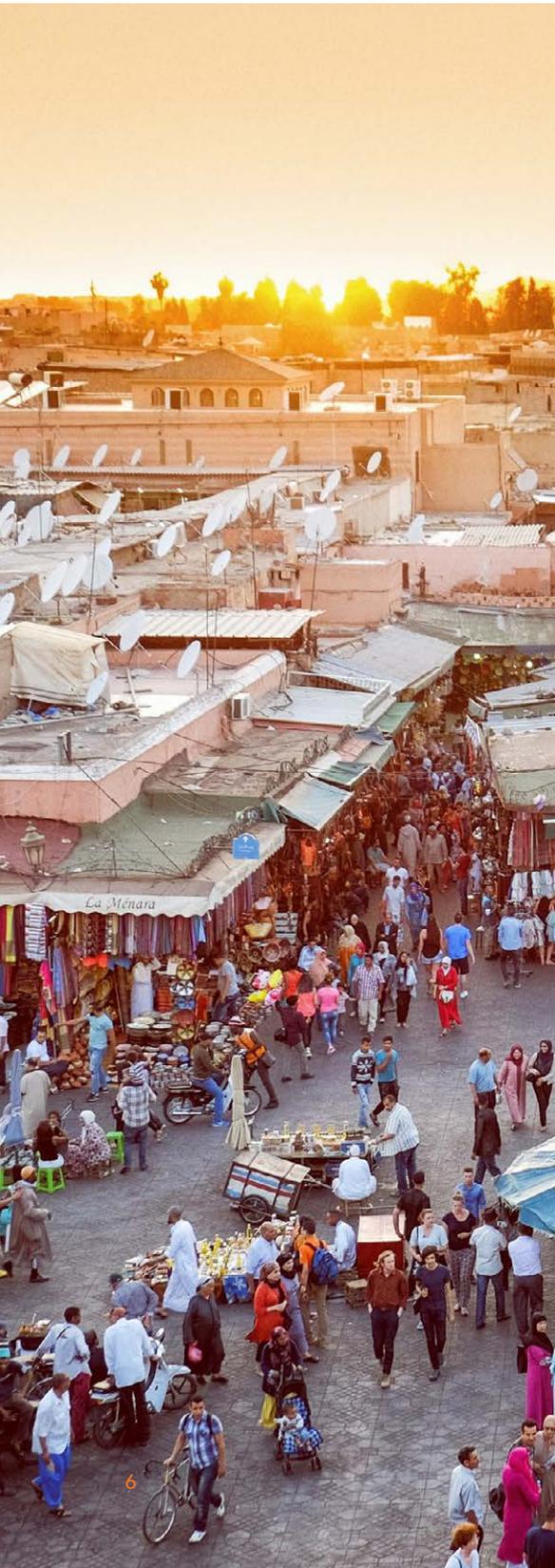
Nick Halstead, founder of DataSift, has started a new company called CognitiveLogic, with the purpose of directly providing Big Data analytics and insights to companies by combining datasets from different enterprises while still maintaining privacy rights. The company will begin by targeting the government, health, and finance sectors.

- [Here's How Twitter's New Algorithmic Timeline is Going to Work](#) - *Casey Newtown, The Verge (@CaseyNewton)*

New information has surfaced about the new Twitter algorithms and how they will reorder timelines, showing the most popular tweets first and related posts. Concerns have been voiced about how the new feed takes tweets out of context; however, users will have the option to opt-out of the new timeline.

Links We Like #5

Publication Date:
February 15, 2016



Politics and Governance

- [The Open \(Data\) Market](#)- Sean McDonald, *Medium* (@Medium) (@McDapper)

McDonald describes the advancement of open licensing movement and the concurrent “Matthew effect”—a trend in unregulated spaces in which the rich get richer, and the poor get poorer. Open source advocates need to look deeper into the social equity tensions that arise due to unregulated markets and open data in order to better increase accessibility and equality.

- [Uber Begins To See the Payout From Accepting Cash Payments](#) - Jon Russell, *TechCrunch* (@JonRussel) (@TechCrunch)

Uber’s traditional payment system has recently been broken: in Hyderabad, India Uber riders are now allowed to pay in cash. This shift away from the credit card is expanding Uber’s reach to new populations and demographics, allowing the company to compete with other dominant players in the international market.

- [Sierra Leone Launches First Mobile Financial Services Guidelines](#) - *Mobile Alliance for Global Good (MAGG)* (@MobilizeForGood)

The first mobile money regulations have been launched in Sierra Leone to help expand financial services to the poor and foster financial inclusion. The country hopes that these steps toward inclusion through mobile services will create economic growth for those who are struggling and strengthen the government’s capabilities to provide essential services to all of their citizens.

Climate Change and Resilience

- [Zika Data Sharing: A Call to Researchers](#) - *Special Programme for Research and Training in Tropical Diseases (TDR), World Health Organization (WHO)* (@WHO)

The Bulletin of the World Health Organization has launched a new data sharing and reporting protocol, which will expand access to information about the current Zika virus. The protocol was established to encourage researchers to share their data in order to more quickly address the epidemic.

- [Agnus: Big Data Could Be a Health Care Game-Changer](#) - Fareed Zakaria, *CNN* (@FareedZakaria) (@CNN)

David Agnus in this CNN interview explains how now we are at an inflection point for intervention in utilizing Big Data for medicine. As electronic health records become more prevalent, technology has created a tipping point to transform our health systems.

- [Crunch Data to Live Longer, Says David Agnus-The Doctor Who Treats the Stars](#) - Rory Carroll, *The Guardian* (@rorycarroll72)

David Agnus points to data as the future of medicine by harnessing the healthcare systems’ amassment of information, which he believes should be shared. Although he acknowledges the issues of patient confidentiality and the caution taken by the medical field, Angus asserts “with enough data, error goes away.”

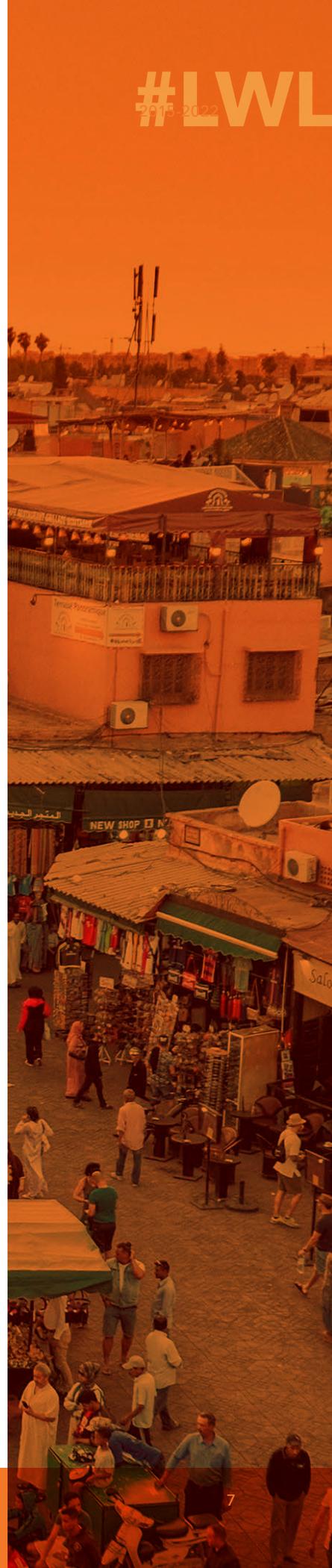
Data Ethics and Literacy

- **All of the World's Money and Markets in One Visualization** - *Jeff Desjardins, Money Project, The Visual Capitalist (@jeff_desjardins) (@VisualCap)*

This data visualization presents the world's total money supply, depicting not only the world's biggest companies and stock markets, but also the world's richest people. The Money Project is an initiative created by the Visual Capitalist and Texas Precious Metals that uses visuals to explore and educate others about the implications of money.

- **Maximum Wage** - *Steven Johnson, Medium (@stevenbjohnson) (@Medium)*

Johnson describes the exponential growth of Silicon Valley and resulting economic inequality, despite the fact that Silicon Valley has one of the more inclusive and sensible pay ratios in comparison to most other U.S. industries. The author analyses both the dissenting and assenting arguments for the economic trend, noting the important role that jobs outside of Silicon Valley play in addressing problems that cannot be fixed by tech.



Links We Like #6

Publication Date:
March 3, 2016



Politics and Governance

- [N.S.A. Gets Less Web Data Than Believed, Report Suggests](#) - *Charlie Savage, The New York Times (@charlie_savage)*

The N.S.A.'s inspector general has released a report that indicates the government is collecting less data from American's Internet communications than previously presumed. The report was commissioned in response to the Snowden leaks in 2010, yet it is still unclear whether filtering the raw Internet data is done by the government or telecommunication companies.

- [FTC Report Provides Recommendations to Business on Growing Use of Big Data](#) - *Federal Trade Commission (@FTC)*

The FTC has outlined a new considerations for businesses to avoid exclusion and discrimination as a result of their use of Big Data analytics. The document highlights how Big Data is used at the end of its lifecycle, after it is collected and analyzed. It notes the potential benefits and risks that could result from utilizing Big Data as a tool.

- [Apple's Stance Highlights a More Confrontational Tech Industry](#) - *Farhad Manjoo, The New York Times (@fmanjoo)*

Apple has publicly refused the US government's request to unlock an iPhone used by one of the deceased murderers in the December 2015 San Bernardino attacks. The opposition will lead to a legal battle, the results of which could pose many implications for the privacy world.

- [La Justice Rivalise D'astuces Pour Ne Pas Enquêter Sur La Surveillance De Masse](#) - *Fabrice Arfi, Mediapart (@fabricearfi)*

[Article in French] The author describes the challenges faced by the International Federation for Human Rights (FIDH) and the Human Rights League of France (LDH) in bringing complaints against US mass surveillance to the French courts.

Climate Change and Resilience

- [Louisiana Tribe is Now Officially a Community of Climate Refugees](#) - *Chris D'Angelo, Huffington Post (@c_m_dangelo)*

The Isle de Jean Charles, 80 miles southwest of New Orleans, which used to be home to a Native American community, is almost completely vanished due to rising sea levels, coastal erosion and flooding (98% of the land is gone). The community is the first official community of climate refugees in the US, and a federal grant from the US HUD will resettle the community to higher ground.

- [Rapid and Near Real-Time Assessments of Population Displacement Using Mobile Phone Data Following Disasters: The 2015 Nepal Earthquake](#) - *Robin Wilson et al., Plos: Current Disasters (@plosc_disasters)*

This research article describes the analysis of the evolution of population mobility patterns following the 2015 Nepal earthquake from using call detail records. The rapid analysis and method described could prove extremely beneficial for humanitarian agencies.

- [Unveiling Hidden Migration and Mobility Patterns in Climate Stressed Regions: A Longitudinal Study of Six Million Anonymous Mobile Phone Users in Bangladesh](#) - *Xin Lu et al., Global Environmental Change Journal*

Using mobile network data collected from Bangladesh in May 2013 during the Cyclone Mahasen, researchers were able analyze human mobility during and after extreme weather events. The study demonstrates that changes in the onset of migration are correlated with changes in the duration of the migration, adding an important framework and methodology for studies of migration and climate change.

Funder and Partner News

- [SensorTape- 3D Aware Dense Sensor Network on a Tape](#) - *Filip Visnjic, Creative Applications Network (@filipvisnjic) (@creativeapps) (@medialab)*

MIT Media Lab's Responsive Environments Group has created a sensor network in a form factor of a tape called SensorTape. The product allows for a wide set of users to create and program large sensor network arrays, and is opening up avenues for applications outside of the current discrete electronics platforms.

Links We Like #7

Publication Date:
March 17, 2016



Politics and Governance

- [In the Apple Case, A Debate Over Data Hits Home](#) - Michael D. Shear, David E. Sanger, and Katie Benner, *The New York Times* (@shearm) (@SangerNYT)(@ktbenner)

In the months since the Apple and F.B.I legal battle over the court order to hack into the iPhone used by a gunman in the San Bernardino attack, Americans are deeply divided over the question of if Apple should cooperate with the law. As the conflict between Washington and Silicon Valley becomes more heated, the result of the conflict will be a major turning point in government surveillance.

- [Don't Post About Me on Social Media, Children Say](#) - KJ Dell'Antonia, *The New York Times* (@KJDellAntonia)

New research has surfaced about the relationship between parents, their children, and social media: children are more concerned than their parents about the ways their parents shared their children's lives online. Finding the right balance between a parent's right to share and a child's right to privacy is an important concern in respecting a child's digital identity.

Climate Change and Resilience

- [Researchers Find the Tipping Point Between Resilience and Collapse in Complex Systems](#) - Thea Singer, *Northeastern University News*

Network scientists have discovered a new tool to identify weather systems and predict tipping points in complex systems. The team from Northeastern hopes that their discovery will help to realize parameters relevant to a system's resilience and through the use of statistical physics, detect early warning signs in a system to prevent collapse.

Data Ethics and Literacy

- [Unlocking Blockchain for the Underbanked](#) - Jackie Hyland, *TechCrunch* (@jackie_hyland)

Blockchain has emerged as a useful tool for financial inclusion and provides cheaper and quicker financial services to those excluded from their local financial systems. Blockchain offers promising potential to change access to financial services through increasing price transparency in remittances, enhancing property rights, and affording digital identities to those who lack verifiable identification.

- [Using Behavioral Big Data for Public Purposes: Exploring Frontier Issues of an Emerging Policy Arena](#) - Rohan Samarajiva, Sriganesh Lokanathan, *LIRNEasia* (@samarajiva) (@sriganeshl)

This report analyzes the privacy issues implicated in using behavioral Big Data for public purposes, specifically the issues of marginalization, exclusion, and discrimination. As research on Big Data supplements old methods of analysis of effective public policy, typically analysis of information from NSOs, it is important to consider the new challenges that Big Data presents.

- [Ebola: A Big Data Disaster](#) - Sean McDonald, *The Center for Internet & Society* (@McDapper)

McDonald's study explores the privacy and property challenges in coordination of unregulated use of call detail records (CDRs) for humanitarian efforts during health emergencies like the Ebola outbreak in West Africa. Usually used for migration analysis and contact tracing, collection and transfer of CDRs and personally identifiable data pose legal risks that need to be addressed.

Funder and Partner News

- [MIT Media Lab's Journal of Design and Science Is a Radical New Kind of Publication](#) - Liz Stinson, *Wired* (@Lizstins) (@WIRED)

MIT Media Lab has recently launched a new journal, the Journal of Design and Science (JoDS), to promote antidisiplinary work, or work that requires its own framework and methods and does not fit easily into any existing academic disciplines. With no anonymized peer-review process, the Journal and its contents are open and editable, promoting a "peer-to-peer" review.

Research Affiliate News

- [Mobile Data Sharing in Emergencies- Consent, Care and Control](#) - Linnet Taylor (@linnetelwin)

Taylor expands upon Sean McDonald's recent paper entitled "Ebola: A Big Data Disaster," stressing the importance of consent of data-sharing during humanitarian emergencies. As disasters like Ebola usher in a context of urgency, the legality and practicality of consent without purpose limitation poses ethical considerations for governments and mobile operators.

Links We Like #8

Publication Date:
March 30, 2016



Politics and Governance

- **How Cities Score - *The Economist* (@TheEconomist)**
CityScore, a new scoring system that combines 24 different city metrics, is being used by cities' governments across America to improve city planning, engage citizens, and provide better services. Exemplified by the city of Boston, the push to create "smart cities" is introducing a new, active role for cities to fill as better users of local data ecosystems.
- **Future of UK Economic Statistics Set Out at Imperial - *Deborah Evanson, Imperial College London* (@imperialcollege)**
The Data Science Institute at the Imperial College of London was recently launched in the UK as a solution for Britain's complex and changeable economy, which is no longer adequately represented by current statistics. As technology advances and we enter the digital revolution, Big Data analytics must be harnessed to appropriately capture all the activity of Britain's modern economy.

Peacebuilding and Violence

- **The Top Ten Data Sources of Data For International Development Research - *Joseph Holden, The Guardian* (@guardian)**
This article outlines data sources that make international development research more efficient, productive, and simpler. The databases listed are made up of a wide range of resources, each with their own best uses and challenges.
- **Learning From Location - *Laura Adler, Harvard Kennedy School Data-Smart City Solutions* (@DataSmartCities)**
As smartphone ownership in America continues to grow, the use of location data is emerging as a valuable source for enhancing city services. Leveraging location data from social media, passive apps, and citizen reporting can be beneficial for a variety of sectors including crime prediction, public health, and other applications to maximize urban governments.

Climate Change and Resilience

- **Data Mining Reveals the Four Urban Conditions That Create Vibrant City Life - *Emerging Technology from the arXiv, MIT Technology Review* (@arxivblog) (@techreview)**
A new approach to gather urban data has been developed to give an empirical background to Jane Jacobs theories outlined in *The Death and Life of Great American Cities* and relate them to the vitality of city life. Through a collaboration of new databases, census data, land use data, geographic data, and call detail records across six cities, this new evidence-based technique is ushering in a new wave of city planning.
- **Visualizing Urban Fragility - *Robert Muggah, United Nations University Centre for Policy Research* (@igarape_org) (@UNUniversity)**
New data visualization research from the Igarapé Institute, the United

Nations University, The World Economic Forum, the World Bank, and SecDev, has identified the drivers of city fragility in order to answer the question: which cities are most fragile? Indicators such as underdevelopment, armed conflicts, population growth, and violence, are some of the correlates the visualizations use to show the many ways that a city may be classified as “fragile.”

Data Ethics and Literacy

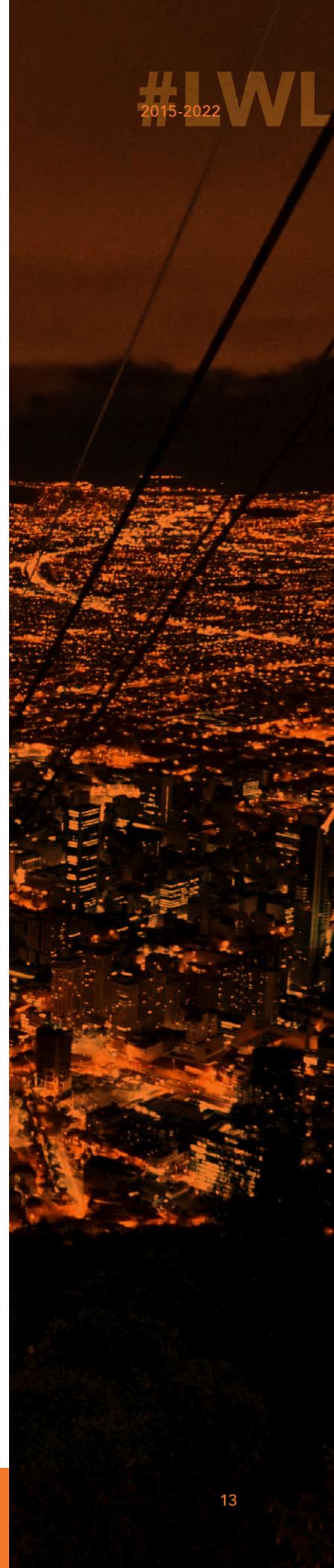
- [Big Data, Ebola Data, + Responsible Data](#) - Willow Brugh, *Responsible Data Forum* (@willowbl00)

A new view about the ethical responsibilities in data use, specifically in light of the Ebola response, argues that practitioners also have a legal responsibility in handling data. The article overviews a call between the engine room, O'Reilly, and Aspiration with other experts to address the legal concerns of call detail records and their handling during the Ebola crisis across the themes of data sharing, anonymization, contact tracing, and consent.

Funder and Partner News

- [Global Patterns of Human Synchronization](#) - Alfredo Morales, Viabhav Vavilala, Rosa Benito, and Yaneer Bar-Yam, *Physics arXiv* (@NECSI) (@arxivblog)

This research analyzes Twitter data to understand the underlying dynamics of social systems. Researchers show that urban areas display cyclic contraction and expansion linked to social cycles and identify patterns of synchronization between social activities and dependencies among the actions of individuals that shape collective behavior in cities.



Links We Like #9

Publication Date:
April 15, 2016



Politics and Governance

- [Southeast Asia Scheme Taps Taxi App to Ease Traffic Jams](#) - *Avantike Chilkoti, The Financial Times (@AChilkoti)*
A new initiative, OpenTraffic, has been launched by the World Bank to help mitigate the crippling urban congestion in Southeast Asia. Using live data from GrabTaxi, the World Bank believes that Big Data sources and statistics can help improve traffic and road safety.
- [Restructuring the Social Sciences: Reflections from Harvard's Institute for Quantitative Social Science](#) - *Gary King, PS: Political Science and Politics, American Political Science Association (@APSAtweets)*
As the social sciences enter a transition towards research that solves problems, diverse datasets, collaboration, and practical impacts, universities have begun to build institutions to respond to this renaissance. The Institute for Quantitative Social Science (IQSS) at Harvard University has emerged as one of these institutions and gives recommendations and suggestions for other academic entrepreneurs seeking to join the renaissance as well.
- [The Blockchain Gang](#) - *James Grimmelman and Arvind Narayanan, Slate (@grimmelm) (@random_walker)*
Authors describe the valuable applications of block chains and their use for international transactions, but warn about the implications in property law. Although Bitcoin and the block chain are ushering in new frontiers in research and adding better consumer protections, they also pose great potential for corruption and exploitation.
- [Joint Statement on the Final Adoption of the New EU Rules for Personal Data Protection](#) - *European Commission (@EU_Commission)*
The European Commission has recently issued a press release confirming the final adoption of the EU data protection rules by the European Parliament. The new data protection rules will allow citizens to obtain more information about how their data is processed and will strengthen the fundamental right to personal data protection.

Data Ethics and Literacy

- [Location Data on Two Apps Enough to Identify Someone, Says Study](#) - *EurekAlert, AAAS (@EurekAlertAAAS)*
Without realizing it, more and more people are sharing their location on a number of apps, allowing for individuals to be identified with high certainty by matching movements and location metadata on social media apps to personal accounts. Researchers at Columbia University and Google have begun to pinpoint privacy issues involved in this process through a new algorithm they developed, which compares geotagged posts on Twitter with Instagram and Foursquare posts to identify users.
- [How a Cashless Society Could Embolden Big Brother](#) - *Sarah Jeong, The Atlantic (@sarahjeong)*
Sarah Jeong describes the potential issues that arise from cash being converted into information in a cashless society, specifically how when money becomes data, surveillance, control and limitation

result. A cashless society could potentially cause pervasive financial censorship and extend the reach of paternal bureaucratic states, impacting everyone and even more disparately impacting the poor.

- [Microsoft Research is Looking at DNA for Storing Your Data](#) - *Kit McDonald, WinBeta (@WinBetaDotOrg)*

The Molecular Information Systems Lab (MISL) at the University of Washington has recently begun to research the potential of an archival DNA data storage system. Although the possibility of a long-term solution to limited data storage capacities through DNA, design and architectural implications still need to be discovered.

Funder and Partner News

- [Energy Consumption Prediction Using People Dynamics Derived From Cellular Network Data](#) - *Andrey Bogomolov, Bruno Lepri, Roberto Larcher, Fabrizio Antonelli, Fabio Pianesi, and Alex Pentland; EPJ Data Science (@alex_pentland)*

Researchers introduce a new approach using anonymized and aggregated telecom data to predict next week energy consumption. As growing populations and industrialization accelerate energy needs, novel findings could present a solution for better decision making in reducing energy consumption.

Links We Like #10

Publication Date:
April 28, 2016



Politics and Governance

- [Over-Politeness is the Fatal Flaw in the Open Data Movement](#) - *Tom Steinberg, Civicist (@steiny) (@Civicist)*

Meaningful transparency reforms typically only happen when a government has faulted and officials need to act to ease the tensions. As the drive for open data in countries continues to languish and yield poor results, the author points to over-friendly collaboration between government and transparency advocates as a hindrance to the open data movement.

- [A New Map of Poverty, a New Approach to International Aid](#) - *Bill Gates, The Wall Street Journal (@BillGates) (@WSJ)*

Gates explains that the way the current global-aid system uses a nation's "average income" to measure poverty poses setbacks to accessing development aid. The present system needs to adapt to account for shifting patterns of poverty, so that countries with extreme inequality and poverty do not lose aid too soon. In addition to broadening eligibility requirements for aid, developing countries must also work to increase government revenues in the fight against poverty.

Peacebuilding and Violence

- [Emerging Urban Digital Infomediaries and Civic Hacking in an Era of Big Data and Open Data Initiatives](#) - *Piyushimita Thakuria, University of Glasgow (@UofGlasgow)*

This paper is part of the forthcoming publication *Seeing Cities Through Big Data: Research Methods and Applications in Urban Informatics*. Authors review non-traditional urban digital infomediaries working to push the agenda of urban Big Data and Open Data. Among the infomediaries assessed, four major groups of organizations and nine organizational types are identified; authors also consider the overlap of activities within organizations and note the need for improved cross-fertilization among those organizations.

Data Ethics and Literacy

- [British Mobile Phone Users' Movements 'Could Be Sold For Profit'](#) - *Damien Gayle, The Guardian (@damiengayle)*

Mobile phone networks and wireless hotspot operators who collect their customers' location data are now selling that data for profit. The data, so detailed that it can reveal the users gender, sexual orientation, religion, and other personal detail, is anonymized, but many fear the possibility of the data getting into the hands of criminals and hackers.

- [Elements of a New Ethical Framework for Big Data Research](#) - *Washington and Lee Law Review (@WLU_LawReview)*

This essay outlines the elements of a framework for capturing the benefits of Big Data while at the same time still respecting the fundamental principles of ethics and privacy, in light of emerging large-scale data sources. The new framework, which should be the product of a collaborative multistakeholder process, aims to support Big Data research in a sustainable and trust-building manner.

Links We Like #11

Publication Date:
May 26, 2016



Politics and Governance

- [Africa's Digital Revolution: A Look at the Technologies, Trends and People Driving It](#) - *Elise Kanza, World Economic Forum (@wef)*

As the digital and technological revolution forges ahead, Africa and its booming population will undergo a cultural revolution--potentially opening cross-border trade, cultural cohesion, and continental integration. This cultural revolution and its many opportunities will be at the hands of Africa's people, specifically of the young minds and leaders across the continent.

- [Data Science Ethical Framework](#) - *RT Hon Matt Hancock MP, Cabinet Office of the Government of the United Kingdom (@MattHancockMP)*

This publication by the Minister for Cabinet Office is the first version of a framework to help increase innovation and responsible use of data by government practitioners. Bringing legal principles into the context of technology and data science, the document promotes the ethical use of data in policy and operational decision-making by the government.

Data Ethics and Literacy

- [Artificial Intelligence Is Far From Matching Humans, Panel Says](#) - *John Markoff, New York Times (@markoff) (@nytimes)*

At a recent event sponsored by the White House Office of Science and Technology Policy, technologists and legal specialists explored the legal, political, social, and economic implications of autonomous machine research. Although consensus was reached about the limitations of today's artificial intelligence, panelists warned that regulation and oversight may be needed in the future as technology continues to rapidly progress.

- [New Publication: Using Geotagged Digital Social Data in Geographic Research](#) - *Mark Graham, Geonet (@geoplacement) (@GeonetProject)*

New research is exploring how digital social data may be useful in understanding relationships between varying subsets of geographical data, providing insights into larger questions about society such as user perceptions and experiences of their environments. The chapter also explores the limitations associated with user-generated and social media data sources for geographical research.

- [Researchers Just Released Profile Data on 70,000 OkCupid Users Without Permission](#) - *Brian Resnick, Vox Science & Health (@B_resnick) (@voxdotcom)*

OkCupid profile data including usernames, ages, gender, religion, and other answers to very personal questions has been released without proper consent. Although the information did not contain users' real names, the release of the dataset poses some ethical implications in informed consent and privacy, as the potential to determine the identity of users through analyzing the identifiable personal data remains a legitimate concern.

- [Humanitarian Data Centre in the Netherlands Will Increase Data Use and Impact in Humanitarian Sector](#) - *UN Office for the Coordination of Humanitarian Affairs (OCHA) (@ochapolicy)*



The UN Office for the Coordination of Humanitarian Affairs is establishing a global humanitarian data centre in the Netherlands to be opened in 2017. Due to the increase in data use in the humanitarian sector, OCHA is forming a collaborative network of partners from the UN, NGOs, private organizations, and academia to find new solutions to the challenges of using data effectively, yet ethically, in humanitarian efforts.

Events and News

- [The World Humanitarian Summit: Winners and Losers](#) - *Heba Aly, IRIN News (@HebaJournalist) (@irinnews) (@WHSummit)*

As the World Humanitarian Summit came to a close in Istanbul, the UN Secretary-General announced more than 1,500 commitments had emerged from the event. The article highlights some of the many take-aways from the Summit, ranging from the need to enhance locally driven aid to respond to conflicts more efficiently. However, among the 8,000 attendees, progress on topics surrounding protecting civilians in war and UN reform had inherent challenges and roadblocks.

- [Promoting a “People-Centered” Data Revolution at the World Humanitarian Summit--And Beyond](#) - *David Sangokoya and Emmanuel Letouzé, Data-Pop Alliance (@datapopalliance) (@WHSummit)*

Data-Pop Alliance hosted 2 side events at the World Humanitarian Summit this past week, both of which focused on the implications and applications of data and Big Data across the themes of WHS. The work of Data-Pop Alliance, both past and ongoing, align with some of the various themes of WHS, including humanitarian effectiveness, reducing vulnerability and managing risk, transformation through innovation, and serving the needs of people in conflict.

Funder and Partner News

- [Building Data Responsibility Into Humanitarian Action](#) - *United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Harvard Humanitarian Initiative (HHI), NYU GovLab, and Leiden University Centre for Innovation (@ochapolicy) (@HHI) (@C4Innovation)*

As the number of humanitarian organizations embracing data in their operations continues to rise, the need to recognize and understand the risks involved in data collection and use specific to the humanitarian context is paramount. This understanding will not only mitigate the potential harms of data use but will also equip humanitarians with the capacity to use data responsibly across varying scenarios and operations.

Links We Like #12

Publication Date:
June 9, 2016



Politics and Governance

- [The CIO Problem, Pt 2: Innovation](#) - Jennifer Pahlka, *Linkedin* (@pahlkadot)

The author explores the issues that arise when governments create a role of Chief Innovation Officer (CIInO) and define it too broadly to encompass “the basics,” such as non-innovative website work. Reserving the innovative label of “innovation” for work that actually modernizes digital tools and practices is crucial, as economic, climate, city, and health threats continue to challenge governments, and radical, non-basic, innovative responses become necessary.

- [Conceptualizing Public Innovative Capacity: A Framework For Assessment](#) - Hanneke Gieske, Arwin van Buuren, and Victor Bekkers, *The Innovation Journal* (@arwinvanbuuren)

This paper describes a new framework for understanding innovative capacity, composing three components [connective, ambidextrous, and learning capacity] across three dimensions [individual, organizational, and network level]. The framework could be used to help create a more comprehensive assessment of what makes public sector organizations innovative and recognize the multifaceted challenges that come with stimulating innovative public organizations.

Data Ethics and Literacy

- [Click here to consent forever: Expiry dates for informed consent](#) - Bart Custers, *Big Data & Society* (@BigDataSoc)

As Big Data and data analysis rapidly changes and evolves, consent may become outdated, but will not be renewed. This paper discusses the ethical implications of outdated consent, and offers the solution of expiration dates for consent. Although expiration dates may not offer an answer for all of the issues of outdated consent and the changing data world, they could be useful in some cases.

- [Newly launched Genomic Data Commons to Facilitate Data and Clinical Information Sharing](#) - *National Institute of Health* (@theNCI) (@NIH)

A new data system that promotes the sharing of genomic and clinical data between researchers, the Genomic Data Commons (GDC), was launched this week. In centralizing, standardizing, and making data accessible for programs within the National Cancer Institute (NCI), the programs hope for a comprehensive knowledge system composed of data from thousands of cancer patients and tumors to foster discoveries in cancer research. In creating this genomic initiative, the NCI has recognized the major concern of data security and has implemented safeguards to ensure the ethical use and storage of the data.

- [A Reformation of Digital and Democracy Literacy Led by Civil Society](#) - Lucy Bernholz (@p2173)

Blog writer Lucy Bernholz emphasizes the importance of literacy in two forms: (1) the understanding of digital data and systems, codes, and algorithms; i.e. data literacy and (2) the democratic priorities and principles that come with data use; i.e. democratic literacy. She notes that not only do all people--the technologists, the policy makers, and



citizens--need to learn these literacies, but they also need to teach it. In the synchronous understanding of democratic and data literacies by all people, solutions may be built.

Development and Humanitarian Efforts

- **So What Do We Really Know About Innovation In International Development? Summary of New Book - Ben Ramalingam and Kristen Bound, Oxfam (@benramalingam) (@oxfamgb)**

New perspectives in international development to navigate challenges in fundings, organizing, collaborating, and scaling innovations are revealed in a new publication, *Innovation for International Development: Navigating the Paths and Pitfalls*. Four trends from successful international development innovations are highlighted, including, (1) having a diverse set of ideas, experiences, and networks; (2) breaking existing rules for how things get done; (3) collaborating and negotiating; and (4) being inventive, rather than imitative.

- **What is the State of Digital Security and Digital Rights Advocacy in the Middle East and North Africa? - Association for Progressive Communications (APC) (@APC_News)**

A new project, *Building a Cultures of Online Human Rights and Digital Security in the Maghreb-Machrek (MENA) region*, launched by the Association for Progressive Communications, is working towards building digital security at the grassroots level and improving legal, policy, and regulatory frameworks that impact freedom of expression, association, and assembly, as well as access to the internet. The project also seeks to determine the effectiveness of the efforts by many organizations to defend human rights, online and offline, and direct efforts to digital security support in this region on the ground.

Events and News

- **Changing the Discourse on Humanitarian Innovations and Partnerships - Benjamin Kumpf, United Nations Development Programme (UNDP) (@bkumpf) (@UNDP)**

Kumpf shares the thoughts explored at a side event of the World Humanitarian Summit in Istanbul this past May concerning how new data sources and real-time information systems may improve decision-making in humanitarian relief. The side event, sponsored by UNDP, UNICEF, the World Food Programme, and Data-Pop Alliance, investigated the future of data in development, emphasizing the importance of representative data, data equity, understanding users' needs, and recognizing barriers to change.

- **Everything* You Always Wanted to Know About the Blockchain But Were Afraid to Ask - Arnaud Sahuguet, CornellTech (@sahuguet) (@cornell_tech)**

At a recent workshop on Blockchain was put on by the Initiative for Cryptocurrencies and Contracts (IC3), an initiative of faculty members at Cornell University, Cornell Tech, and UC Berkeley that seeks to advance the science and applications of blockchains. The Workshop explored research challenges to the use of Blockchain, including scaling, correctness, confidentiality, compliance, applications beyond cryptocurrencies, and authenticated data. In addition, the author goes into detail about the differences between Bitcoin and Blockchain.

- [Using Gateway to Research Data to Explore Welsh Research Networks](#) - *James Cardiner, Juan Mateos-Garcia, Nesta (@JMateosGarcia) (@_JamesRG)*

A new project to develop an innovation data analytics platform for the Welsh government, Arloesiadur, seeks to identify and track collaboration networks in Wales across research topics and academic disciplines. In better understanding the networks that do and do not exist, university, and industry, they hope to help better inform policymakers so that they may create more effective initiatives to create more networks or support those already in place.

Funder, Partner, and Affiliate News

- [Less Heat and More Light: Can We Bring More Facts to the Refugee Discussion?](#) - *Hannah Postel and Owen Barder, Center for Global Development (@hpostel) (@owenbarder) (@CGDev)*

The EU and individual European governments are struggling to tackle and keep up with the growing refugee crisis. A new initiative by the Overseas Development Institute (ODI) and Oxford Refugee Studies Center, among other partners, is working to create more practical, evidence-based policy proposals for the refugee crisis. A major issue for governments is their confusion of the terms asylum-seekers, refugees, and internally displaced people--the data the initiative has collected is beginning to clarify the numbers behind these groups and their motivations.



Links We Like #13

Publication Date:
February 15, 2017

Algorithms, Accountability and Transparency

[Persuading Algorithms with an AI Nudge: Fact-Checking Can Reduce the Spread of Unreliable News. It Can Also Do the Opposite](#) - *Nathan Matias, MIT Media Lab*

CivilServant worked with Reddit moderators of r/worldnews, a 15 millions-subscribers community discussing world news, to test the effects of encouraging fact-checking to respond to unreliable news. To bypass the feedback loop effect of Reddit's ranking algorithm, that spreads tabloid news even further, the experiment's hypothesis was to "persuade algorithms to behave differently by persuading people to behave differently".

[How Facebook's Fact-Checking Partnership Will Work](#) - *Mike Isaac, The New York Times*

In the aftermath of the American elections, Facebook's fact-checking partnership with several news organizations like The Associated Press, PolitiFact and Snopes aims to address the spread of fake news. Mike Isaac interviews the president of ABC News James Goldston, about his work within the partnership.

[Society-in-the-Loop: Programming the Algorithmic Social Contract](#) - *Iyad Rahwan, Associate Professor MIT*

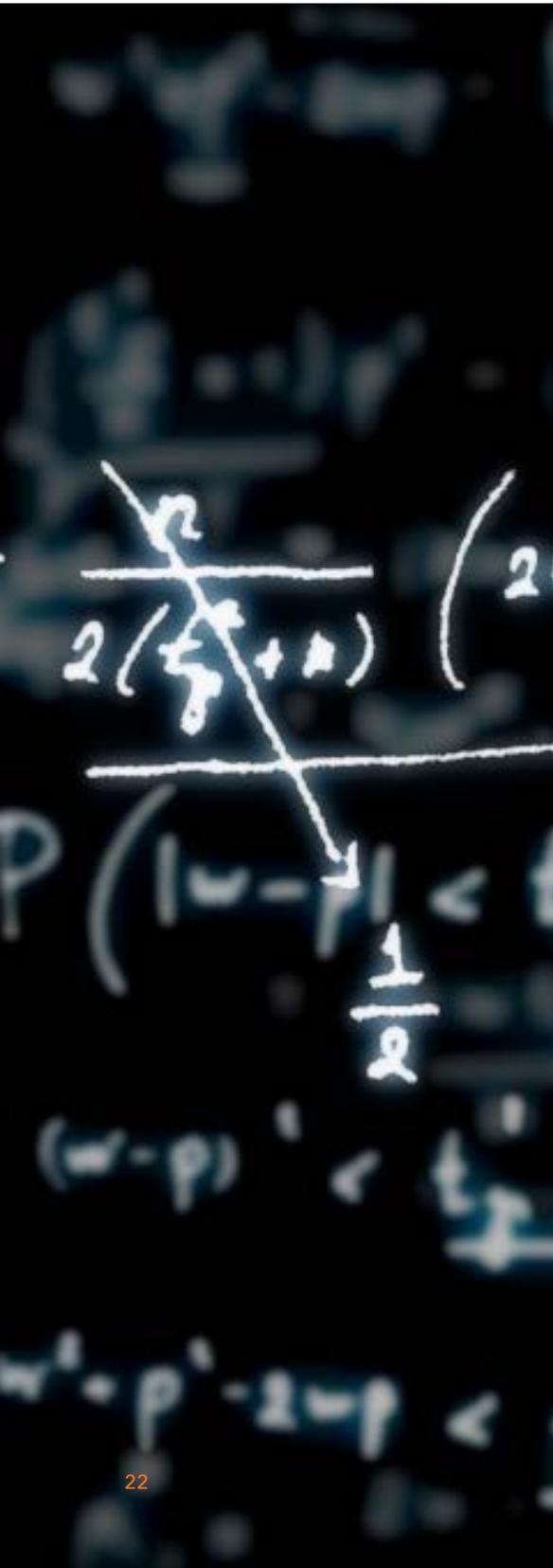
Iyad Rahwan develops the meaning of what he calls "society in the loop", a scaled up version to the societal implications of putting "humans in the loop" of automated systems. The author highlights the need to build new tools to bridge the gap between humans and governance algorithms.

[Influential Computing Researchers and Practitioners Announce Steps to Prevent Algorithmic Bias: ACM US Public Policy Council Issues Seven Principles to Foster Algorithmic Transparency and Accountability](#) - *Association for Computing Machinery*

The ubiquity and far-reaching impact of algorithms in different aspects of society raises transparency and accountability issues, as cases of potential algorithmic bias for e.g. in job hunting websites and social media have been reported. In January, the US Association for Computing Machinery issued a statement and list of seven principles to address the issue.

[Code-Dependent: Pros and Cons of the Algorithm Age](#) - *Lee Rainie, Director of research Pew Research Center and Janna Anderson*

Machine learning and algorithms have already become an intrinsic aspect of our daily lives. With great potential to solve almost any current and future problems, algorithms also raise innumerable questions and challenges, ranging from undermining individual autonomy to reinforcing social inequalities. Building on a large-scale canvassing of technology experts, scholars, corporate practitioners and government leaders, the authors try to weigh the positive and negative effects of algorithms for individuals and society.



Politics and Governance

Big Data, Meet Big Brother: China Invents the Digital Totalitarian State - *The Economist*

The Chinese government issued this year more detailed guidelines on its “social-credit system” announced in 2014. The system, already being criticized by the state-run media, is aimed not only at scoring the financial creditworthiness of citizens but also their social and possibly political behavior. The project echoes the debate on freedom restrictions and privacy invasions in China and outlines the risks of social control in the digital era.

Official Statistics and Population

The World Of (Official) Data And Statistics; Not Yet Dead - *Johannes Jütting, Manager of the Partnership in Statistics for Development in the 21st Century (PARIS21)*

The first World Data Forum extensively discussed how data and statistics can support the implementation of the Sustainable Development Agenda. The discussion ranged from how to produce data and statistics needed to monitor the SDGs and the role of open data, to questions on the relevance and legitimacy of public statistics. The need to enhance literacy and capacities to manage the new everyday data deluge and to build trust and partnerships were highlighted as conditions to embrace the data revolution.

Literacy and Ethics

AT&T Indigo Colors Data Sharing Secure - *Carol Wilson*

AT&T is launching the Network 3.0 Indigo, a secure data sharing platform running on a virtualized network (read more about the network’s three pillars [here](#)). The Indigo platform is intended to “knit together existing technologies” in order to create a “manageable information sharing environment” that provides appropriate protection and privacy. By enabling a safe environment, the goal is to foster data collaboration between companies and ultimately unleash the power of big data and analytics.

Development and Humanitarian Efforts

Financial Service Providers, Aid Agencies Agree on Joint Principles to Respond to Humanitarian Crises - *Peter Vanham, World Economic Forum*

The World Economic Forum announced that eighteen global private-sector (including some of the world’s largest financial service providers, global IT and telecom companies) and humanitarian organizations (including UNHCR, OCHA, UNDP, WFP and the European Commission) have agreed on six principles to shape public-private collaborative response to humanitarian crises. The full report outlining the principles is available [here](#).

Links We Like #14

Publication Date:
March 13, 2017



Gender (in)Equality Through Data and Technology

Gender equality and women's empowerment are both a stand-alone goal (SDG 5: Achieve gender equality and empower all women and girls) and a precondition for achieving the Sustainable Development agenda. Persistent inequalities, including in education, economic, political and social realms, call for enhanced and targeted action. Easy access to incisive and meaningful sex-disaggregated data is the first step towards measuring and thus addressing inequalities. In that optic, UNESCO has released a new edition of the eAtlas of Gender Inequality in Education, available [here](#). Emphasizing the need to further connect data and advocacy to achieve gender equality, Equal Measures 2030 is an initiative aiming to fuel progress towards gender equality by "making sure that girls' and women's movements, rights advocates and decision makers have easy-to-use data and evidence to guide efforts to reach the Global Goals by 2030 and leave no one behind". Equal Measures 2030 is brought together by Asia-Pacific Resource and Research Centre for Women (Arrow), Bill & Melinda Gates Foundation, Data2X, the African Women's Development and Communication Network (FEMNET), International Women's Health Coalition, KPMG International, ONE Campaign, Plan International and Women Deliver. You can read more about the initiatives objectives in [this blogpost](#), by Alison Holder (Director of Equal Measures 2030) and Silvia Montoya (Director of the UNESCO Institute for Statistics).

- [International Women's Day: Why We Need to Connect Data and Advocacy to Achieve Gender Equality](#), Alison Holder, Director of Equal Measures 2030, [Silvia Montoya](#), Director of the UNESCO Institute for Statistics
- [UNESCO eAtlas of Gender Inequality in Education](#)

Online Harassment: What Can Big Data Do for Gender Equality?

"What you need to understand as you are doing the ironing is that Wikipedia is no place for a woman." An anonymous comment on a user's talk page, March 2015

As an assiduous Wikipedia editor, and therefore "public" online-persona, Emily Temple-Wood has been the target of unrelenting abuse for over a decade: "people have been harassing me since the first vandal figured out I was a lady". Instead of succumbing to what are attempts to silence her, Temple-Wood aimed for more visibility and respect for all women: "for every harassing email, death threat, or request for nude photos that she received, she resolved to create a Wikipedia biography on a notable woman scientist who was previously unknown to the free online encyclopedia". Read the full story [here](#).

Harassment is a statement of power abuse, disproportionately targeting women and underrepresented groups, in private, public and online spaces. Acknowledging that harassment is pervasive in several online

communities - almost three quarters of internet users have witnessed online harassment and 40% have personally experienced it - the Wikimedia Foundation and Jigsaw are looking for technical possibilities to mitigate it. Read more about this research - "Algorithms and insults: Scaling up our understanding of harassment on Wikipedia" - [here](#).

- [The troll taunter: a young Wikipedia editor withstood a decade of online abuse. Now she's fighting back - on Wikipedia itself](#), Andrew McMillen
- [Algorithms and insults: scaling up our understanding on harassment on Wikipedia](#), Dario Taraborelli, Wikimedia Foundation, Ellery Wulczyn, Wikimedia Foundation, Lucas Dixon, Jigsaw, [Nithum Thain](#), Jigsaw

Gender Biases in Artificial Intelligence

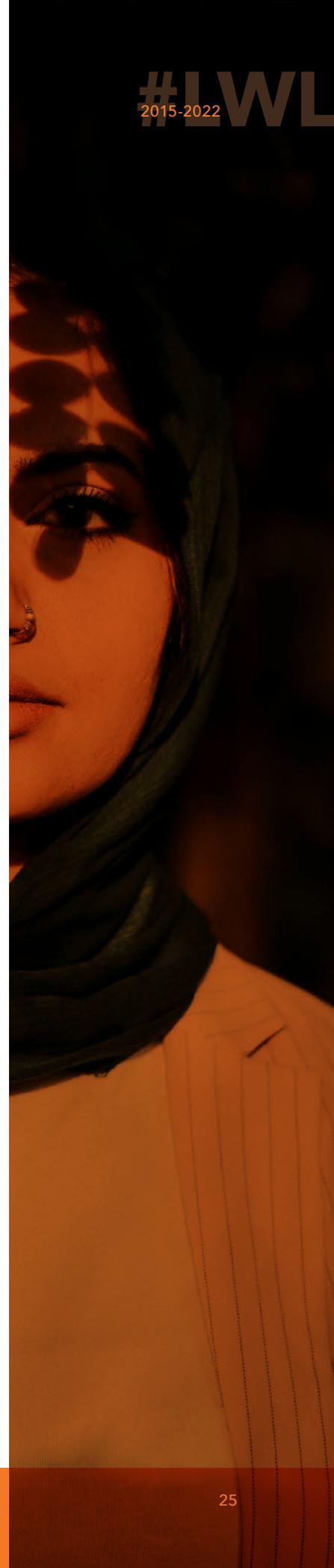
As technology develops and intelligence bots such as Siri, Cortana and Marcus grow popular over the years, it becomes evident that artificial intelligence is dangerously shaped by biases in human thinking. In "Siri, Cortana, Alexa, Marcus. Do bots really need a gender?" (here) Healthinar Engagement, questions why "female bots typically perform more administrative and secretarial roles such as assisting in the completion of routine tasks, scheduling meetings and customer service (...) and male bots on the other hand, often perform more analytical roles like providing financial advice and paralegal services". By absorbing human stereotypes, the danger is that AI will further foster sexist behavior. Read more on biases into programs, algorithms and designs in "Is AI Sexist?" here.

- [Siri, Cortana, Alexa, Marcus. Do bots really need a gender?](#), Healthinar Engagement
- [Is AI Sexist?](#), Erika Hayasaki, Foreign Policy

Harassment in Tech

Susan J. Fowler recently revealed the sexist work-environment and permissive HR sexual harassment policies endured during one year at Uber, (re) bringing to light the discussion on harassment in the male-dominated tech industry. Her blog post ([here](#)) provides dreadful insights on a toxic culture mixing deeply anchored discrimination, cynicism and partiality. The New York Times relayed the case as a potential "watershed for women in tech" ([here](#)), emphasizing the need for "deep, long-term and through effort to remake a culture that has long sidelined women - not just at Uber but across the tech business too". In response to the New York Times' article, Debbie Madden, CEO at Stride, wrote a blogpost ([here](#)) demystifying good anti-sexual harassment policies, drawing on her 20+ years of experience in the tech industry. Madden argues that not only companies in the tech industry have gotten harassment against women in the workplace right, but that it shouldn't take years for companies such as Uber to put appropriate policies in place.

- [Reflecting On One Very, Very Strange Year At Uber](#), Susan J. Fowler, Stripe
- [Uber Case Could Be a Watershed for Women in Tech](#), Farhad Manjoo, New York Times
- [To Uber: Many in Tech Have Gotten Harassment Against Women in the Workplace Right for Decades](#), Debbie Madden, Stride



Links We Like #15

Publication Date:
May 18, 2017



Algorithmic Justice, Risk Assessments and Fairness

Algorithms are increasingly taking part in (human) decision-making processes, supposedly fostering efficiency and objectivity. In the justice system, risk-assessment and predictive algorithms are being used to shape and support policing, pre-trial decisions, and sentencing. In a world of inequalities, can justice be made fairer through artificial intelligence?

Recidivism and Pretrial Risk Assessment

The Wisconsin Supreme Court recently sentenced a man to six years in prison – taking into consideration a report produced by “Compas”, a risk-assessment algorithm sold by Northpointe Inc., which pointed to “a high risk of violence, high risk of recidivism, high pretrial risk.” In a [recent interview](#), Sharad Goel, Assistant Professor of Management Science and Engineering at Stanford University, discussed the benefits and limitations of using algorithms for decision-taking in criminal justice systems, arguing that “to gain wider support and adoption, (...) these algorithms need to be developed with more transparency. The leading risk assessment tools are often built under a veil of secrecy, which understandably sows misunderstanding and distrust.”

Laurel Eckhouse, a doctoral candidate in Political Science at UC Berkeley and Researcher with the [Prison University Project](#) at San Quentin State Prison and Human Rights Data Analysis Group, has argued that [Big Data may be reinforcing racial bias in the criminal justice system](#), because “the data [data-driven tools] rely on are collected by a criminal justice system in which race makes a big difference in the probability of arrest – even for people who behave identically. Inputs derived from biased policing will inevitably make Black and Latino defendants look riskier than white defendants to a computer. As a result, according to her, data-driven decision-making risks exacerbating, rather than reducing, racial bias in criminal justice”. Focusing on algorithms for pretrial release decisions, the working paper [“Algorithmic decision making and the cost of fairness”](#), made available in February 2017, analyze several techniques recently proposed to achieve algorithmic fairness.

- [Sent to Prison by a Software Program’s Secret Algorithms](#)
Adam Liptak. New York Times. May 1, 2017.
- [Exploring the use of algorithms in the criminal justice system](#)
Vignesh Ramachandran. Interview with Sharad Goel, assistant professor of management science and engineering at Stanford University. Stanford Engineering. May 3, 2017.
- [Big Data may be reinforcing racial bias in the criminal justice system](#)
Laurel Eckhouse, researcher with the Human Rights Data Analysis Group’s Policing Project, and a doctoral candidate in political science at the University of California at Berkeley. The Washington Post. February 10 2017.
- [Algorithmic decision making and the cost of fairness](#)
Corbett-Davies et al. Working paper. Stanford University. February 17, 2017.

Predictive Policing

The Los Angeles Police Department has been using data-driven approaches to predict likely crime hot-spots and improve crime prevention by deploying officers more accurately. This pilot project, developed in partnership with University of California and PredPol, a [predictive policing technology company](#), is using a “mathematical model of Moher to predict the areas where crime is likely to occur.” The model is said to have contributed to decreasing burglaries, violent and property crimes. However, [Cathy O’Neil, author of “Weapons of Math Destruction”](#), and one of Data-Pop Alliance Research Affiliates, has argued that such models also create a pernicious feedback loop as “the policing itself spawns new data, which justifies more policing”. This is what O’Neil calls a “weapon of math destruction (WMD), or math-powered applications that encode human prejudice, misunderstanding and bias into their systems”, and thus reinforce inequalities and punish the poor. All the more since this data is then further used to feed recidivism models such as the ones mentioned above.

- [The Los Angeles Police Department Is Predicting and Fighting Crime With Big Data](#)
Mark van Rijmenam, Founder of Datafloq. Datafloq. April 17 2017.
- [Justice in the age of big data](#)
IDEAS.TED.COM. April 6, 2017. Excerpted from the new book Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy, by Cathy O’Neil, data scientist and author of the blog mathbabe.org

Text Mining and Machine-Learning Algorithms for Assessing Bias in Court Sentences

As part of a case-study to develop methodologies to track the implementation of recommendations issued by the United Nations Universal Periodic Review (UPR) process, text mining and machine-learning were as a viable strategy for monitoring gender discrimination within Fiji’s judiciary system. An extensive analysis of case law archives was conducted to determine whether or not patriarchal beliefs and gender discrimination have a systemic impact on the outcome of GBV sentences in Fiji. Read more about this study [here](#).

- [Mining Case Law to Improve Countries’ Accountability To Universal Periodic Review](#)
Soline Aubry, Hansdeep Singh, Ivan Vlahinic, Abhimanyu Ramachandran, Sara Fischer, Robert O’Callaghan, Natalie Shoup, Jaspreet Singh, David Sangokoya, Gabriel Pestre and Carson Martinez. Working paper, February 2017. CKM Advisors, ICAAD, Data-Pop Alliance, Global Insight.

Links We Like #16

Publication Date:
February 15, 2019

AI For Social Good

Google's "AI for Social Good" initiative launched on October 2018, aiming to drive the adoption of "Artificial Intelligence (AI) for public good". Beyond the buzzword, how can we define this emerging field? In this week's Links We Like we take a closer look at projects and research that use AI for sustainable development and social good purposes.

Human AI

The paper "[Towards a Human Artificial Intelligence for Human Development](#)", by DPA Director Emmanuel Letouzé and Academic Director Alex "Sandy" Pentland defines the concept of "Human AI", as the ability to apply the core principles and requirements of artificial intelligence to entire human systems. In other words, to reinforce and reward systems that "get it right" with regards to policies, programs, behaviors, and actions. As a central item in the decision-making process, AIs would generate, crunch, and take over various tasks to empower more rational policies, fairer politicians and more efficient processes. The authors argue that "a human AI would be a system where it would be difficult for an elected representative to claim credit or assign blame out of hot air, because citizens would say 'Really? Show me the data'". Human AI is an aspirational analogy: the goal of placing good data sources at the core of a new social contract suited for our 21st century societies.

AI Capabilities for Development

The broad applicability of artificial intelligence towards the United Nations Sustainable Development Goals is highlighted in McKinsey Global Institute's "[Applying artificial intelligence for social good](#)", which analyzes 160 AI social-impact use cases. This report illustrates that the most prevalent issues being addressed through AI are Health and Hunger, Environment, and Crisis Response. The figure below showcases some of these uses, mapping their frequency and the domain in which they are applied.

The infrastructure required to scale up the use of AI for social good is a critical component as access to data in an ethical, transparent, and safe manner could be outpaced by the technology of artificial intelligence itself. [OPAL \(Open Algorithms\)](#), a project being deployed by Data-Pop Alliance, MIT Media Lab, WEF, and leading telecoms, is designed to meet this need and enable aggregated insights to be derived from privately held data without them ever leaving their servers. The McKinsey report notes that "if proven successful, this could be a powerful tool in unlocking private data for social causes."



Further Afield

Dive deeper into AI use across development sectors.

AI for Public Health

- How Prof. Mihaela van der Schaar is developing state-of-the-art research to revolutionize medicine through AI, machine learning and data science
- How AI is “cracking the code for cystic fibrosis”

AI for Emergency Response

- The role of AI and machine learning in disaster relief



Links We Like #17

Publication Date:
March 14, 2019



Green Tech: The Sustainability Conundrum

As a data-driven organization, we dwell in the techno-scientific world, leveraging research, capacity building and community engagement around topics such as machine learning and AI to drive a people-centered Big Data revolution. Although sustainable development is one of the main drivers of our work, we know how large the environmental footprint of technology can be. Technology has the potential to drive innovations that target pollution, greenhouse gasses, and overall quality of life, but it is also, undoubtedly, a cause of the problem.

Promoting technological diversity and long-term innovation seems to be a priority in order to ensure sustainable development. In this week's Links We Like we feature articles that target the sustainability vs. technology debate - are we caught in the cycle of using technology to mitigate the problems we cause with our prior increase in technological knowledge?

Blockchains Could Help Clean Up The Planet - If They Don't Become Environmental Problems Themselves [Article - MIT Technology Review]

Mike Orcutt from MIT Technology Review explains that, despite the [World Economic Forum's](#) hope on how blockchains, and distributed ledger technology (DLT) in general, can help heal the world, DLT poses a sustainability challenge in and of itself. According to Orcutt "many energy experts are convinced that blockchain technology has the potential to touch off a fundamental transformation of modern energy grids", but powering blockchain networks use massive amounts of electricity. In 2014 alone, U.S. data centers consumed 70 billion kilowatt-hours of electricity, enough to power 6.4 million average American homes. This consumption, however, is still relatively low compared to other industries. For more information on peer-to-peer energy trading, and making the electric grid smarter through blockchain, [click here](#).

The Green-Tech Future is a Flawed Vision of Sustainability [Article - The Conversation]

A green-tech future is envisioned as one where consumers and producers figure as stewards of sustainability merely by engaging in the market. As so, with green-tech, the technology sector is poised for green growth. "[Why the green-tech future is flawed](#)" confronts individual's consumption patterns and technologies, even when considered "green," with what author Samuel Alexander claims is an irreversible ecological footprint. Changing purchasing patterns is not enough. It requires both changing behaviors, particularly reducing demand, alongside better technologies.

Further Afield

Dive deeper into the sustainable and technology debate.

- [How technology can make our food system more sustainable](#)
- [The effect of the Internet of Things on sustainability](#)
- [Technology's role in scaling up sustainability: saviour or destroyer?](#)

Links We Like #18

Publication Date:
June 2, 2019



Algorithmic Bias and the Gender Data Gap

A [recent article](#) by Wang et al studies gender trends in computer science authorship, revealing that, “if current trends continue, parity between the number of male and female authors will not be reached in this century”. Although examining the proportion of female authorship over time only captures one of the many facets of representation in academia, quantifying gender inequality in computer science furthers the debate on whether a [discipline that has traditionally been white and male](#) is imbuing its systems and algorithms with the biases inherent to the workforce at large.

How does the lack of gender representation in academia, particularly in computer science and its related disciplines, affect the systems, machines and algorithms designed to represent, measure and study human behavior? Does the lack of gender parity play a role in introducing gender biases to machine learning and AI? **In this week’s Links We Like we feature recent articles that tackle this continuing debate, introducing the question of gender parity and its relationship to algorithmic bias. studies gender trends in computer science.**

[AI’s White Guy Problem Isn’t Going Away](#) [Article - MIT Technology Review]

Karen Hao, artificial intelligence reporter for MIT Technology Review, explains how AI technology has “automated the biases of its creators to alarming effect”. This comes as no surprise, as she notes that “only 18% of authors at leading AI conferences, 20% of AI professorships, and 15% and 10% of research staff at Facebook and Google, respectively” are women. But fixing the gender gap in the AI industry is not only about improving workplace diversity. Hao interviewed Jessie Daniels, a researcher for Data & Society, a research institute based in New York City. Daniels noted that “the tech industry was fundamentally built on the ethos that technology exists independently of society”, and thus neither race and gender were thought to be relevant in cyberspace. To this day, she adds, the industry has built on the idea that tech products are designed and exist “independently of the sexism, racism, and societal context around them”. To read Hao’s article, and Daniel’s interview [click here](#).

[AI and Gender Bias in AI](#) [Trend Brief - The Catalyst]

The [Catalyst’s](#) “Gender Bias in AI” brief hones in on the difference between assisted, augmented, and autonomous intelligence to discuss how hiring and talent management systems relying on AI may have potential to “move the needle on gender equality in workplaces” by using more objective criteria than when decisions are made without these systems. Some examples include hiring tools that assess applicants based on specific data, skills, and abilities, others filter a candidate’s appearance and voice during the interview process to reduce gender bias. Yet, AI as an equalizer remains an aspirational objective: “unconscious biases” that individuals hold often translate into “unintentional biases” trained onto the machines. To read more on how gender bias is built onto AI, [click here](#).



Further Afield

Dive deeper into gender biases and AI.

- Explore the Algorithmic Justice League’s [results](#) for the “[Gender Shades](#)” project, which measures the “accuracy of AI powered gender classification products”.
- [Why we need to solve the issue of gender bias before AI makes it worse](#)
- [A.I. Experts Question Amazon’s Facial-Recognition Technology](#)
- [Discriminating Systems: Gender, Race and Power in AI](#)

Links We Like #19

Publication Date:
September 12, 2019



The Dispute Over 5G

China and the United States are the biggest adversaries in the dispute over who will control one of the main technological advances in recent history: 5G, or fifth generation cellular network technology. 5G promises to connect everything. As [Will Knight from the MIT Technology Review](#) points out, these technologies “will replace cable connections and open the door for many more devices to connect and update through the Internet, including home appliances and industrial machines.” It is expected that through its wireless infrastructure, 5G will provide a bandwidth of up to 20 gigabits per second (equal to a speed 100 times faster than 4G), according to Knight: “enough for hospital devices that rely on 5G’s ever-present, never-lagging bandwidth to run perfectly”.

Headlines all over the world have honed in on the dispute between the United States and China, countries aware of the potential of 5G, and eager to control the construction of these networks around the world. It is believed that whomever becomes the pioneer of 5G network development will reap the benefits of “developing and monetizing services that use them”, according to [Elizabeth Woyke](#). The implication of such would be becoming a world leader in the Internet of Things (IoT).

In this week’s Links We Like, we feature articles that explain what exactly 5G is, as well as point out how and why the dispute over 5G is unfolding.

5G Isn’t Just a Buzzword. It Will Change the World [Article - World Economic Forum]

Self-driving cars, efficient healthcare, and smart cities are just some of the potential areas of impact for fifth-generation technology. CP Gurnani, Managing Director and CEO of Tech Mahindra, writes for WEF that “the potential for disruption is enormous and those who prepare well for 5G, have much to gain.” The principal differentiator for the 5G network is its low-latency capability, making real-time, actual real-time, without the very small lag of current networks. For Gurnani, however, cost, regulation, access, and infrastructure are still items that need to be addressed as we gear up for 2020, the year when 5G is expected to become commercially available.

A New Kind of Cold War [Article - The Economist]

5G is one of the issues affecting the brewing tensions between China and the US. According to The Economist, the two powers are contesting all domains that may tip the balance in global leadership, including Artificial Intelligence, trade, and even chipmaking. 5G is the technology at the forefront of this confrontation, as illustrated by the recent US ban on Huawei, a Chinese company at the cutting-edge of 5G implementation. “In crucial technologies such as chipmaking and 5G”, the article notes, “it is hard to say where commerce ends and national security begins.”

Who Should Fund US Research and Development? [Commentary - Rand Corporation]

Daniel M. Gerstein, senior policy researcher at the RAND corporation and former US DHS Under Secretary for the Science & Technology



Directorate, notes that control of fifth-generation cellular wireless networks and supply chains is akin to a technological Cold War: ensuring leadership in the technology entails that U.S interests “are protected across networks that offer vastly greater speed and capacity.” Being at the losing end of such a battle would put on the line both control of the network, and internet security. Putting scientific discovery solely at the hands of the private industry is not enough, according to Gerstein, and current debate on 5G proves such a point.

3 Ways to combat Poverty Through Transformational Technology [Article - RealLeaders]

Maciej Kranz, current EVT and CTO at KONE, mentions that the increases in 5G wireless networks and low earth orbiting (LEO) satellites, will provide high speed internet access to more than half a billion farms around the world. In turn, new educational opportunities will open for those in rural areas who do not have access to physical classrooms, as the possibilities for online education increase. Additionally, the combination of IoT and internet access facilitated by 5G, can improve the decision making process for farmers, decreasing their risks of crop failure.

While the race for 5G unfolds and the US and China compete to reap its benefits, it is important to also focus on how leadership in 5G will tip the balance on access to the network facilitated to other countries. While 5G has great potential for development - probably much more than we’re able to convey in this short post - these opportunities will go unrealized if access is not guaranteed. For this reason, continued developments in regulating the access to the internet, which the [UN recently discussed in a declaration](#) as an “enabler of human rights and the fulfillment of the SDGs” - will also be a key determinants to fully attain the benefits that society can gain from this technology.

Further Afield

Understanding 5G

- [Race to 5G Report](#)
- [The 5G Revolution: Why is this simply not another G?](#)
- [The 5G era: Age of boundless connectivity and intelligent automation](#)

Understanding the China-US Dispute Over 5G

- [The real reason America is scared of Huawei: internet connected everything](#)
- [China is racing ahead in 5G. Here’s what that means](#)
- [The war for 5G faces the United States and China](#)
- [The 6 reasons why Huawei gives the US and its allies security nightmares](#)

Links We Like #20

Publication Date:
October 23, 2019



Big Data for Climate Change Resilience

Climate change and the looming threats to humankind its forecasts have headlined major news sources for a couple of weeks now. As the greatest menace to human kind, its effects are not only imminent, but ever more present with the recurrence of natural disasters, alarms of rising sea levels and faltering ecosystems. Though much is yet to be done in terms of widespread global action, many solutions have the potential to mitigate the disruptions of environmental phenomena.

It is no surprise that artificial Intelligence and Big Data are at the forefront of this debate. As David Rolnick, leading expert in the field emphasizes, “[AI is not a silver bullet](#)”, but rather an area worth exploring due to the array of new applications and techniques that can contribute to measure, reduce and adapt to the effects and impacts caused by climate change

In this week’s LWL, we feature the direction where research on climate change and big data is heading; the domains in which machine learning can help drive energy efficiency, and some of the obstacles preventing the wide-spread escalation of these projects.

Extreme Events - Building Climate Resilient Societies [Event - Herrenhausen Conference]

This event took place as part of the Herrenhausen Conference in Hanover, Germany, initiated by the [Volkswagen Foundation](#). It sought to bring attention to the “relations between climate extremes and the Sustainable Development Goals”. Emmanuel Letouzé, our Director and co-founder, was a keynote speaker at the conference, discussing how big data can help to monitor hazards, assess exposure and vulnerability of populations; as well as guide disaster response, assess the resilience of natural systems, and engage communities. Visit our [Climate Resilience & Livelihoods](#) page to find out more about our research-related projects.

Here are 10 Ways AI Could Help Fight Climate Change [Article - MIT Technology Review]

Leading experts have been working together to identify the key areas in which AI and machine learning could have or are having the most impact in driving energy efficiency –an imperative if we are to avoid reaching the 2 degree Celsius limit of warming global temperatures. Predictions for energy requirements and extreme weather events; discovering and creating low-carbon materials; lowering barriers to electric-vehicle adoption; investing in greener transportation; reducing waste-energy from buildings; making precision agriculture possible at scale and monitoring agricultural emissions; improving deforestation tracking, and nudging consumers to reduce their carbon footprint are some of the projects that researchers believe, will lead to high-impact outcomes in the short term. For the full version of the report, [click here](#).

The Oil Spill in Brazil [News Discussion]

The Amazon fire is not the only crisis looming in Brazil. Many are unaware



of the [oil spillage crisis that took place last month](#), which continues to affect more than a hundred beaches in nine different states of the country. Interestingly, the oil spill seems to be the most recent emergency call for using AI technology and machine learning to lessen the environmental impact of the oil industry. AI can be used to increase surveillance of large infrastructures and operations, particularly for maintenance and prevention purposes, by incorporating drones and video surveillance technology. More critically, it can help us discern the tipping point in the chain of events leading to an oil spill. The latter is crucial in order to manage and halt this kind of crisis, [according to Talal Husseini](#). However, such actions are usually time-consuming and expensive, as has been the case for Brazil: “tests had proved crude oil was produced in Venezuela, but officials had not been able to identify the vessel responsible for the leak”, [declared](#) the President of Ibama, the national environmental agency.

Global Fishing Watch: Fighting Illegal Fishing with Big Data [Platform - Global Fishing Watch]

One of the initiatives sharing data globally for wildlife protection, is the Global Fishing Watch (GFW), an independent, international non-profit organization using “cutting cutting-edge technology to visualize, track and share data about global fishing activity in near real-time” (explore map [here](#)). Despite the vessels being obliged to emit a large amount of data, which is picked up by satellites every minute, it wasn’t until four years ago that the tracking of suspicious fishing vessels became a working project. Even more interesting is the fact that any government –anyone, really– is able to access it and act however they see fit: “Enforcement is up to the country”, [says](#) Bjorn Bergman, GFW regional manager for Central and South America.

The organization applies machine learning to analyze data gathered from several sources (amounting to more than 60 million points of information daily), allowing them to identify 12 types of vessels and to isolate them based on their movements. But their goal is broader: The GFW seeks to help prevent human rights abuses, including modern slavery, human and drugs trafficking, corruption and money laundering, all crimes [linked](#) to illegal, unreported and unregulated (IUU) fishing.

Using Old Cellphones to Listen for Illegal Loggers [Article - New York Times]

The article features a fascinating project leveraging audio-based artificial intelligence to monitor and fight deforestation. This cheap and innovative technology relies on old cell phones (placed at treetops), solar panels and audio data to distinguish any “telltale audio signatures of illegal activity” (eg. chainsaws). Rural communities in Indonesia, Peru and Ecuador have turned to this creative solution pushed forward by [Rainforest Connection](#), a nonprofit group in California. Of course, the existence of the device doesn’t necessarily equate prosecution of the criminals or an end to deforestation. In that sense, Mr. White, the inventor, posits that “The question is whether this technology can reach a point where it can fly on its own and be useful on its own”.

Further Afield

Big Data, AI & Climate Change

- [What's really driving corporate climate action?](#)
- [Big Data, Big Voids: What's Missing In the Massive Conversation On Climate](#)
- [How to respond to climate change, if you are an algorithm](#)
- [Rich Counties Get More Help to Escape Climate Risk, New Data Show](#)
- [If we want to solve climate change, water governance is our blueprint](#)

Projects Using Big Data to Protect Wildlife

- [These State Birds May Be Forced Out of Their States as the World Warms](#)
- [These Whales are Serenaders of the Seas. It's Quite a Racket](#)
- [State Seeks To Make Satellite Data Available To Better Track Harmful Algal Blooms](#)



We Like #21

Publication Date:
November 1, 2020



Elections, Democracy and Big Data

With the upcoming presidential election in the U.S., media outlets such as [ABC News](#) and [The Economist](#), and even scholars like [Alan L. Abramowitz](#), have searched for creative and insightful ways to use big data and data analysis as a way of better understanding the electorate and forecasting the results. In particular, different organizations are seeking to leverage big data to predict electoral outcomes. [Project FiveThirtyEight](#), for instance, is a series of models aimed at forecasting the 2020 elections outcomes by analyzing polling, economic and demographic data.

Even though (big) data holds a huge potential in the electoral field, it also carries important risks. As the 2016 U.S. election showed, using data to run campaigns can lead to further polarization by creating [eco chambers](#) where algorithms that reproduce and reinforce predetermined political views are used. According to experts such as Harvard Professor [Cass Sunstein](#), and Eli Pariser, entrepreneur and author of [The Filter Bubble: How the New Personalized Web Is Changing What We Read and How We Think](#), big data is being increasingly used to create a “bubble” where like-minded people exclusively receive similar information that consequently draws them to a more extreme stance. Pariser advocates for data models that are clearly communicated and used responsibly to avoid a complete fragmentation and polarization of society. Furthermore, as Colin Koopman, head of Philosophy & Director of New Media & Culture Certificate Program at the University of Oregon stated, “data will drive democracy” and it is all because “our society lacks an information ethics adequate to its deepening dependence on data”. We need to use data to broaden our understanding, but the question about how to regulate and reduce ethical challenges remains. The way in which we set out to do both tasks can and will determine if the utilization of data in the electoral process is beneficial or harmful.

In this week’s Links We Like we explore the intricacies of bringing data analytics into the electoral cycle:

Forecasting the US Elections [Dataviz Platform - The Economist]

By using polling, economic and demographic data, [The Economist](#) created a [real time forecasting tool](#) (updated daily). To do so, they generated different models that aim to measure the outcome of the general election in terms of electoral college and popular vote. They have also tailored a forecast model for each state that shows how other states might move in response to each state’s numbers.

FiveThirtyEight Interactives [Dataviz Platform - FiveThirtyEight]

[Project FiveThirtyEight](#) launched a forecast platform in which they simulated the 2020 presidential election 40,000 times based on current polls as well as economic and demographic data, in order to determine the chances each candidate has of winning. They further created a map that lays out the states that are most likely to vote for either candidate and the states that have a close call in the middle. This information is also available in a timeline, where the change over time in polls is recorded.

Big Data Analytics and Predicting Election Results [Whitepaper - Data Science Foundation]

Ajit Singh from the [Data Science Foundation](#) says that data analytics has evolved to such measures that it is currently the “brain of every election since the Obama campaign”. He further assesses that big data analytics is used in two main ways: forecasting electoral results and helping campaigns have better understanding of their voters, as well as adapt to their sentiments. However he warns of an important risk when forecasting results: any small miscalculation can completely alter the outcomes and influence voters’ willingness to actually vote.

A Political Scientist Explains How Big Data is Transforming Politics [Article - Vox]

[Sean Illing](#) interviews Yale political science Professor and author of [Hacking the Electorate: How Campaigns Perceive Voters](#), [Eitan Hersh](#) to understand the way in which campaigns use data to mobilize voters. Hersh argues that “if you have enough data, you can predict how people will behave, how they will vote” and therefore you can have a better understanding of what your support base is. Yet, the risk lies in that candidates can also adjust their campaigns to vouch only for what their voters want, ending up excluding the rest of the population.

Big Data and Democracy [Article - American Scientist]

In an interview with [Dianne Timblin](#) of American Scientist, [Jamie Bartlett](#) explains how democracy and elections are turning into a data science, where voters are 1’s and 0’s that can be observed and targeted through algorithms that are then used to predict the person’s probability of leaning one way or the other in an election. In this way, the campaign seeks to fully understand each individual and give him or her a specific propaganda message that is perfectly tailored to the person’s likes, needs, fears and preferences. In this sense, Bartlett argues that big data is now used in campaigns to not only identify their strong support bases, but also the undecided voters who are then targeted with stronger and larger propaganda to turn their vote.

How Big Data Broke American Politics [Article - NBC News]

Has big data reduced the American electorate into 1 and 0, yes’s and no’s? According to [Chuck Todd](#) and [Carrie Dan](#), this is the case. The researchers argue that it wasn’t data itself that broke the electoral system, but rather the misuse and manipulation of it that brought us to a “breaking point”. In their findings, big data has made campaign managers realize that winning the middle ground electorate may not be as important as previously thought, but rather attempt to guarantee their support base votes, and therefore creating a much more polarized electoral panorama.

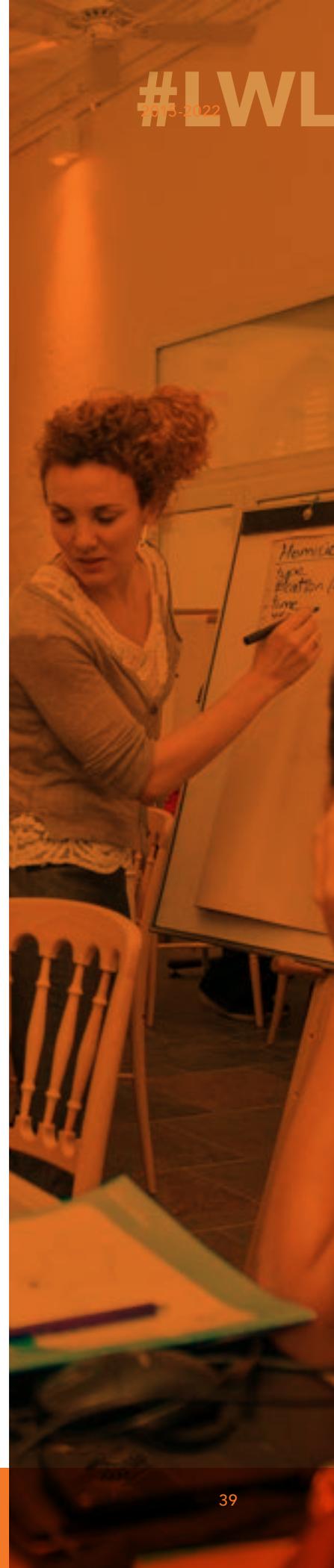
Further Afield

Big Data, Elections and Democracy

- [How Democracy Can Survive Big Data](#)
- [Data-drive elections: implications and challenges for democratic societies](#)
- [How the Trump campaign used Big Data in practice](#)
- [How Possible Is It Now to Predict US Elections With Data Analysis](#)

2020 Elections and Big Data

- [New Big Data Sentiment Analysis Show Potential Biden Election Landslide](#)
- [Data Analysis Software Uncovers Voter Sentiment in 2020 Election](#)
- [What Will Happen in the 2020 Election?](#)



Links We Like #22

Publication Date:
November 25, 2020



Gender, Violence and Data

In Latin America and the Caribbean, women have been commemorating the Elimination of Violence against Women Day ever since 1981, after the assassination of the three Dominican sisters [Patricia, Minerva, Maria Teresa Mirabal](#). Yet, it only became officially recognized and adopted by all UN countries in 1999. Today, on the 21st anniversary of its commemoration –which serves as a reminder of this global crisis– the call for governments, business, academia, and civil society to continue working in eliminating all forms of violence (physical, sexual, psychological, economic, etc.) against women and girls remains urgent.

This year, the theme for the UN’s annual campaign of 16 Days of Activism Against Gender-Based Violence is “[Orange the World: Fund, Respond, Prevent, Collect!](#)”. Interestingly, one of the main lines of work for the campaign is the “collection of data that can improve life-saving services for women and girls”, which highlights the crucial role data has in reaching the overall goal of ending VaW. In that sense, many initiatives, including the surveys carried out by the [Organization of Security and Co-operation in Europe \(OSCE\)](#), the grants in Africa and South America supported by the [Spotlight Initiative](#) and the work carried out by our organization itself in Mexico, Brazil and Colombia, are focused on building data-driven responses to assess and fight for women’s right to live a life free of violence. But we should not forget that data is more than numbers. [Sharon Besell](#), professor at the Crawford School of Public Policy, where she is also the Director of Gender Equity and Diversity, points out data is the pathway towards gaining more insight into the meaning behind the numbers. In the context of the current pandemic, data gains even greater importance, when we take into account how the health crisis has clearly exacerbated gender inequalities, especially domestic violence.

Hence, to join in this day’s activism towards a world free of violence against women, this edition of [Links We Like](#) explores the intersectionality between data and efforts to prevent, combat and respond to VaW.

[Women’s Rights Online: Closing the Digital Gender Gap for a More Equal World](#) [Report - World Wide Web Foundation]

This year, the World Wide Web Foundation published a report that addresses the issue of digital gender inequality by conducting a survey amongst almost 10,000 women and men in four countries: Colombia, Ghana, Indonesia and Uganda. Based on the results, they argue that, though the digital gender gap on basic internet access has been increasingly narrowed down, a lot of barriers still remain for women to use the internet and fully participate online. Additionally, the WWW Foundation emphasizes the gravity of the issue due to the role the internet plays today as an empowerment tool, that unless women can equally benefit from it will only drive further inequality.

[Data Feminism](#) [Book - By Catherine D’Ignazio and Lauren F. Klein]

The authors of [Data Feminism](#), [Catherine D’Ignazio](#) and [Lauren F. Klein](#) highlight the need to be critical in the way we develop the field of data science because data is not neutral, there is potential good or harm

in how we manage and interpret it. For this reason, we should always be asking the following questions: Data science for whom? By whom? And with whose interests in mind? When the practice of this field excludes women and other marginalized groups, a huge data gap arises in areas that deal with their well-being and rights. Therefore the goal is not just to gather data, but rather to do so with a clear and ethical approach that puts women and the historically excluded population's rights at the center.

Visualize Gender Equality [Platform - Operation Fistula]

The organization [Operation Fistula](#) has developed a project that strives to harness the power of data visualization in advocacy efforts that seek to transform how organizations work to end gender inequality. They will use data from the GOFAR tool as well as data from partners and grassroots organizations to collect subnational information that will be displayed in [Tableau](#) to represent the issue of "fistulas" in a visual manner. "Fistulas" are childbirth injuries caused by prolonged labor without medical attention, which is associated to other issues such as: child-marriage, female genital mutilation and GBV.

Will These 3 Gender Data Trends Outlast the Pandemic? [Article - Devex]

In this [Devex](#) article, the author discusses new ways that groups focused on gender data had to find in order to measure and understand more about girls and women experiences following the outbreak of the COVID-19 pandemic, especially in regards to gender-based violence. One of the approaches featured in the article belongs to our current project with the [GIZ Data Lab](#), which objective is to create a visualization map to identify hotspots of domestic violence in Mexico by leveraging traditional and non-traditional sources of data. To learn more about this project, read the [Discussion Piece](#) from our blog titled "Using Data to Shed Light on the Shadow Pandemic of Domestic Violence in Mexico".

Women's Lives, Behind the Data [Article - The Washington Post]

In this article, the [Washington Post](#) describes the importance of not just having data on the different ways women face violence every day, but in using that data to look for solutions that actually alleviate their situation and bring forth empowerment and better living standards. By showcasing four different forms of violence (female genital mutilation, lack of access to education, sexual violence underreporting and women in positions of power), the authors demonstrate how these situations directly affect women's lives and how there is still a lack of adequate public policies to mitigate the issue.

Further Afield

Dive deeper into Violence against Women and Data.

The Magnitude of Violence Against Women

- ['If I'm not in on Friday, I might be dead': chilling facts about UK femicide](#), The Guardian
- [Violence Against Women and International Security](#), Foreign Affairs
- [Ten harmful beliefs that perpetuate violence against women and girls](#), Oxfam
- [Violence Against Women and Girls](#), CPS
- [Domestic Violence Awareness Guide](#), Wristband

Violence Against Women, Data and Maps

- [The Pitfalls of Data's Gender Gaps](#), Scientific American
- [Violence against women](#), OECD
- [Global Database on Violence against Women](#), UN Women
- [Gender Statistics](#), UN Stats
- [The Role of Data in Addressing Violence Against Women and Girls](#), UNFPA
- [Fighting violence against women: From data to action](#), Devex
- [Ensuring data collection and research on violence against women and domestic violence: article 11 of the Istanbul Convention](#), Council of Europe

Webinars

- [Webinar: Mobilizing gender data for better decision-making during COVID-19](#), Paris 21
- [Talking Data Feminism with Catherine D'Ignazio and Lauren F.Klein](#), Data2x
- [Data Against Femicide](#), ILDA
- [Webinar: Gender-based violence. A global pandemic](#), Women Refugee Route
- [Gender Data Network Webinar Series: Lessons from the pandemic: Building better gender data in the world of work](#), UN Foundation

COVID-19, Data and Violence Against Women

- [The COVID-19 Sex-Disaggregated Data Tracker](#), Global Health 5050
- [COVID-19 and ending Violence against women and girls](#), WebRelief
- [Violence against Women and Girls data collectn during COVID-19](#), UN Women

Links We Like #23

Publication Date:
December 18, 2020



Harnessing Big Data for Mobility and Migration

In 2019, the [International Organization for Migration \(IOM\)](#) estimated that the number of migrants worldwide had reached 272 million, a figure that has tripled since 1970. Though most of these migrants fled their countries searching for better job opportunities, about 26 million people have been driven away from their homes by armed conflict, violence and climate change. In the hope of shedding light on the issue and calling for policy action, in 2000 the General Assembly of the United Nations proclaimed December 18 as [International Migration Day](#). This global scenario brings with it many hardships and opportunities for migrants, as well as for the receiving countries.

For those seeking to understand more about the phenomenon and inform policy making, the greatest challenge is quantifying it at a granular level and in a comprehensive manner. In that sense, the [Pew Research Center](#) has stated that the issue with migration data is first that by definition migrants are on the move, making it hard to know where they are heading or where they came from. Moreover, because they don't always use legal means to enter a country, it is difficult to obtain registries of their activity. Finally, given the lack of a shared understanding of who a migrant is, data collection and comparability between datasets become highly complex matters.

Withstanding the hard work many national governments and international institutions have conducted to gather and assemble migration data using traditional methods (e.g. national population census, surveys or administrative records), a large gap in the quantity and quality of available data still remains. According to the [IOM](#), the problem stems from lack of updated information and the significant financial cost attached to these methods. In recent years, Big Data has stepped in to try and fill the gap that traditional sources have left in mapping and analyzing the dynamics of national and international migration. Initiatives such as the [Joint Data Center](#), created by the [UNHCR](#) and the [World Bank](#), have dived into the use of different types of Big Data to monitor migration patterns and migrants' locations around the world. In addition, different research papers (see [Facebook Data Science team 2013](#), [Clements et. al 2010](#), [Williams and Ralph 2013](#), [State, Weber and Zagheni 2020](#)), have looked into how the use of Big Data sources – IP geo locations, Google search queries, and Flickr geotags, etc. – can contribute to gathering sociodemographic information, as well as the real-time location of migrants.

The main argument for leveraging Big Data for migration is that these sources can inform the response of government and global institutions to increasing migration influxes, and therefore help in the development of adequate public policies that take into account migrants' needs from a human rights standpoint. **With that in mind, this edition of Links We Like addresses the topic of Big Data for migration and explores some of the key challenges, limitations and opportunities brought forward by this developing area of work.**



Big Data, Migration and Human Mobility [Platform - Migration Data Portal]

The [Migration Data Portal](#), managed by the [International Organization for Migration](#), was developed in 2016 following the second Berlin Roundtable on Refugees and Migration. The article discusses different types of Big Data sources (i.e. Call Detail Records, Geo-located social media activity, repeated logins to the same website, and IP addresses from email activity), which can be used for migration-related studies. Furthermore, it builds on the potential that Big Data has to fill in the gaps of traditional migration data. For instance, the former can be collected at a lower cost and provide timely monitoring of public opinion. Some limitations, however, remain: ethical and privacy issues, biases, difficult access to data sources and methodological complications to unpack the large amount of “noisy” volumes of data.

Big Data, Big Promises: Revisiting Migration Statistics in Context of the Datafication of Everything [Blog - University of Oxford]

In the [University of Oxford Law Faculty Blog](#), researchers [Stephan Scheel](#) and [Funda Ustek-Spilda](#) discuss to what extent Big Data has changed the way in which migration is measured and its obstacles to solve the most representative issues in migration statistics. According to the authors, these limitations are threefold.

The politics of numbers: how numbers relating to migrants or refugees often change depending on who is reporting them and the interest behind it.

The politics of method: how different sources utilize different methods to analyze the information, and therefore, obtain different results. Additionally, there are inherent methodological problems when using some types of Big Data (e.g. social media and mobile phone records) since these tools are not used by all groups of migrants or refugees, thus the data is likely to present selection biases.

The politics of (national) distinction: the different ways in which countries categorize migrants and asylum seekers.

Estimating Migration Flows Using Online Search Data [Project - UN Global Pulse]

In 2014, the [United Nations Population Fund](#) conducted a study to explore how online search data could be leveraged to better understand migration flows. This report uses Australia as a case study, and compares Google search query data from around the world with official statistics of migrants arriving in the country from 2008 to 2013. To conduct this analysis, the UNPF extracted monthly volumes of search queries related to employment (e.g. ‘jobs in Melbourne’ or ‘work visa’) from Google Correlate, and then compared the results with statistics available for the same time period. This study is an example of the way in which online search data can complement official data.

The Missing Migrants Map [Project - Behance, Corriere della Sera]

The [Missing Migrants Project](#) is a joint initiative between IOM’s [Global Migration Data Analysis Center](#) and the [Media and Communications Division](#). It aims to track the deaths of migrants whose lives have been lost along migratory routes all around the world. The project uses official statistical data from governments, as well as sources from other agencies, NGOs, surveys and interviews with migrants and media reports. Based on the collected data, this initiative built a visualization map that identifies death incidents that occurred in the European and Mediterranean area in 2015. Furthermore, given the many challenges regarding migrants casualties along migration routes (e.g. lack of available data and media coverage), the project further seeks to strengthen data availability and collection

process in regions like the Middle East, North Africa, Sub-Saharan Africa, South Asia, Southeast Asia, and Latin America.

Harnessing Big Data to Improve Refugee Resettlement [Study - Immigration Policy Lab]

In this study, the [Immigration Policy Lab](#) at [Stanford University](#) and [ETH Zurich](#) used a machine learning model to simulate the allocation of 30,000 refugees aged 18-64 who had been placed by a major agency from 2011-2016. This simulation calculated, based on historical data, the likelihood of an individual refugee to find employment at each resettlement location in accordance to his or her demographic profile. The model also took into account real-world constraints such as the fixed number of job vacancies from each resettlement office. Lastly, they matched each incoming refugee case to the place that offered the highest probability of employment. In using the model, the researchers discovered that when compared to the actual historical outcomes, the average refugee was more than twice as likely to find a job if they had been placed in a hosting community by the algorithm. The authors highlight the potential value of using machine learning models to improve the experience of refugees in their host countries.

Further Afield

Refugees and Big Data

- [The role of big data in refugee contexts](#)
- [Big data's big role in humanitarian aid](#)
- [How the U.N. Refugee Agency will use big data to find smarter solutions](#)
- [Millions of refugees could benefit from big data - but we're not using it](#)

Migration and Big Data

- [Can Facebook tell us about the next great human migration?](#)
- [Big Data and International Migration](#)
- [Why Big Data Cannot Fix Migration Statistics](#)
- [Measuring migration using big data](#)
- [Big Data and International Migration](#)

White Papers on Big Data and Migration

- [Migration Data using Social Media](#)
- [Social Media and Forced Displacement: Big Data Analytics & Machine-Learning](#)
- [Human migration: the big data perspective](#)

Films About Migration

- [The Golden Dream \[La Jaula de Oro\]](#)
- [Fire at Sea](#)
- [Human Flow](#)
- [Immigration Nation](#)
- [Which Way Home](#)

Links We Like #24

Publication Date:
February 2, 2021



Fighting Misinformation with Big Data and Artificial Intelligence

We are currently living in the age of information and data. Whether it be through news outlets or social media, everyday we are bombarded with hundreds of images and headlines that come in the shape of articles, personal stories, memes or videos. In this busy landscape, “fake news” and misinformation have become an increasing tendency, almost the “new normal”, with far-reaching consequences including impacting the [results](#) of the 2016 United States election and, more recently, the spreading of false information around the [COVID-19 pandemic](#).

To counter these issues, many fact-checking initiatives (e.g. [Fact Check](#), [Politifact](#), [The Trust Project](#) and [Snopes](#)) have emerged to help identify when a post, article or video contains dubious or fake content. However, this task - which usually requires careful human inspection - is a slow and inefficient process, especially in terms of preventing false information from going viral. In that regard, [Facebook](#)’s strategy is interesting, if lacking. The company recently added a tool that allows users to flag news-feed posts as “fake news”. When a large number of people do this, the post appears on other users’ feed with less frequency and carries a warning. Unfortunately, user-generated reporting can backfire and lead to censorship, as experts believe has been the case for the [Syrian government opposition](#). In this context of socio-economic polarization, lack of regulation and low will from the private sector, “fake news” (which are also easy to create) continue to proliferate. Moreover, since this kind of content is not only produced by humans, but also by bots and Artificial Intelligence, identifying, controlling and tracking misinformation has become a complex and surmounting endeavor.

Big Data and Artificial Intelligence approaches have been leveraged to tackle this phenomenon by creating models to automatically decipher false information and prevent it from spreading. For example, professor [Maite Taboada](#) from [Simon Fraser University](#) has focused her [research](#) in making social media and online-platform discussions a more reliable and safe space for communication by working at the intersection of linguistics, computational linguistics and data science fields. However, Machine Learning projects have not all been used to fight misinformation, but rather in some cases - as what happened with the telecom provider [Vittel](#)-, to facilitate the propagation of [deep-fake videos](#) or the use of [OpenAI GPT-2](#) to automatize “fake news”.

To explore the danger of misinformation and the tools and strategies being used to stop them from propagating, **this edition of Links We Like addresses the topic by exploring some of the key challenges, limitations and opportunities brought forward by this developing field of work.**



Episode #1 Conversation with Craig Silverman (Buzzfeed) [Podcast - Conversations With Data]

In this episode of the [Data Journalism](#) podcast, BuzzFeed's media editor [Craig Silverman](#) talks about online misinformation and the importance of content verification in journalists' work. In this conversation, Craig argues that verification processes are necessary to assess that the news and data we receive has been created by 'reliable' sources. He also points to the second [Verification Handbook](#) published in 2020 where leading practitioners in the area of disinformation and media manipulation comment on the current information challenges faced worldwide. At last, he makes a call for newsrooms to question their sense of urgency in publishing news and to raise the bar by cultivating verification skills.

The Reality Game: How the Next Wave of Technology Will Break the Truth [Book - by Samuel Woolley]

In an interview with [The Economist](#), misinformation specialist [Samuel Wooley](#) discusses his latest book regarding the role of technology in creating and spreading misinformation and hate speech. In his book, he argues that AI - such as 'deep fake videos' bots and machine learning programs are permeating the digital sphere, creating confusion among users and endangering democratic practices. However, the solution to the problem also requires AI technologies to automatically identify false information or hate speech in articulation with a stronger educational platform for media literacy. Furthermore, to confront the larger issue, big companies like Facebook and Twitter need to implement more rigorous policies regarding information operations and hate speech.

The Spread of True and False News Online [Article - Science]

By conducting one of the largest studies on fake news (which encompassed analyzing around 126,000 stories tweeted by 3 million users for over more than 10 years), MIT professors [Sinan Aral](#), [Deb Roy](#) and Dartmouth professor [Soroush Vosoughi](#) observed that false news were far more likely to reach more people than the truth. In their study, they found that a false story on average reaches 1,500 people six times quicker than a true story, and that the top 1% of false news is diffused to around 1,000 and 100,000 people while the truth is rarely diffused to more than 1,000 people. Additionally, the authors found out that tweets spread by bots and by real users were retweeted at the same rate, and furthermore through a sentiment-analysis tool, they found that the spread of false content on Twitter is greatly influenced by the appeal in the language used by 'fake news', which usually evokes feelings of surprise and disgust.

WeVerify Project [Project - WeVerify]

Funded by the European Union, the WeVerify project tackles advanced content verification through a participatory verification approach, open source algorithms and machine learning. The project will analyze social media and web content to detect misinformation and then proceed to expose any misleading or fabricated content by micro-targeted debunking and a blockchain-based public database of publications that are known to be fake. Due to its open source nature, the platform engages communities, newsrooms and journalists to enable in-house content management systems while having the support of digital tools to assist with verification tasks. Furthermore, the platform developed a browser plugin to facilitate advanced content verification tools to easily fact-check information.

Better Fact-Checking for Fake News [Article, Project - MIT News]

A team from the MIT Computer Science & Artificial Intelligence Lab developed a research project where they questioned previous fake news identifiers that relied on automatic text detectors of machine-generated text created with [OpenAI's GPT-2 language model](#). Starting from the idea that the most intrinsic characteristic of fake news is their factual falseness and not if the information was human or machine generated, the team calls into question the credibility of current misinformation classifiers. Based on these findings, the team developed a system to detect false statements using the world's largest fact-checking dataset, Fact Extraction and VERification (FEVER). Although at first the created model focused too much on the language of the text and not the external factual evidence, they later created an algorithm that outperformed previous ones in all metrics.

Further Afield

Misinformation and COVID-19

- [Using misinformation as a political weapon: COVID-19 and Bolsonaro in Brazil](#)
- [Battling the 'pandemic of misinformation'](#)
- [A guide to overcoming COVID-19 misinformation](#)
- [A Misinformation Pandemic](#)
- [How misinformation is distorting COVID policies and behaviors](#)

Fake News and the Verification of Information

- [Knowledge-Based Trust: Estimating the Trustworthiness of Web Sources](#)
- [Digital verification for human rights advocacy](#)
- [Big Data and quality data for fake news and misinformation detection](#)

AI Tackling Misinformation

- [Artificial Intelligence and Disinformation](#)
- [Using AI to Combat Fake News](#)
- [Identifying, Tracking, and Fact-Checking Misinformation](#)
- [Here's how we're using AI to help detect misinformation \(Facebook\)](#)

AI and the Spread of Misinformation

- [AI is helping spread misinformation faster. How can we deal with that?](#)
- [The role of technology in online disinformation](#)
- [The new AI tools spreading fake news in politics and business](#)

Links We Like #25

Publication Date:
March 5, 2021



Discrimination in Data and Artificial Intelligence

In commemoration of the international [Zero Discrimination Day](#), and following the call to action from the president of the United Nations General Assembly [Volkan Bozkir](#) to “call out discrimination when we see it and advocate for a more just world”, this edition of LWL looks at issues of discrimination in artificial intelligence (AI) and data.

As AI and machine learning-implemented solutions grow more popular, experts grow more concerned about the human bias introduced inside the built algorithms. This situation has ignited a debate surrounding the ethical hurdles that societies will encounter as data scientists work towards programming the future. In fact, in the “[2017 data scientist report](#)”, AI specialist company CrowdFlower (acquired by [Appen](#) in 2019) asked 179 data scientists to list their top concerns in the field, and the results showed that 63% of the respondents are worried about “human bias/ prejudice programmed into machine learning” followed closely by the “impossibility of programming a commonly agreed upon moral code”. These concerns continue to be raised today, as discriminatory patterns reveal themselves in the field.

Ranging from AI systems used to determine [student loans](#), and [mortgages](#), to [machine learning picture sets](#) and [google images](#), AI and data have been found to have a deeply discriminatory nature that is not limited to how it is used but instead to the intrinsic way in which it is built. How AI is structured and built matters because as [Cathy O’Neil](#) has argued in her book “[Weapons of Math Destruction](#),” algorithms are opinions embedded in code; they are not objective, scientific or fair, but are rather the repetition of past practices. In this sense, as [Andrew Burt](#) – specialized lawyer in artificial intelligence and information security – suggests, discrimination as a result of using AI and data may not originate on conscious malicious intent (disparate treatment), but on disparate impact consequent of “neutral” variables acting as proxy’s for protected variables (i.e. gender and race).

To counter discrimination initiatives such as [Incoding](#) (proposed by [Joy Buolamwini](#), an MIT graduate student and founder of the [Algorithmic Justice League](#)) have been set in place to fight what its creator calls the [coded gaze](#). This mechanism factors fairness in machine learning algorithms, as it attempts to make “social change” a priority in data. Despite these initiatives, there is still much to be done. A continuous effort to combat the discriminatory behaviors that are embedded in our data and AI is needed. Moreover, we have to take into account that algorithms are not objective and that we need to question who is coding, how they are doing it and why, to get closer to a more just and transparent data ecosystem.

Read ahead to find excellent resources that will help you to better understand the nuances of intersection between discrimination, data and AI, and to reflect about the challenges and possible solutions posed by the leading experts on the field.



All Tech is Human Series #2 - Data Discrimination & Algorithm Bias [Podcast - The Radical AI Podcast]

During the second episode of the “All tech is human” series in the [Radical AI Podcast](#), authors and professors [Safiya Noble](#) and [Meredith Broussard](#) discuss how we can reduce discrimination present in data, as well as the algorithm bias that continues to perpetuate gender and racial stereotypes. Professor Noble argues that AI and data do not discriminate because of the way people use them, but rather because these technologies are designed in ways that foster oppression and social inequality. Furthermore, professor Broussard explains how tools like facial recognition are weaponized to discriminate against certain races and gender groups, and therefore the need to question the ways in which we use technology and reevaluate the notion that technology is always the best solution. Both professors make a call for holding algorithms accountable and for us to be conscious of how technology can promote discrimination. They also emphasize the importance of being actively involved in the conversation and decision-making processes.

Monitoring Hiring Discrimination Through Online Recruitment Platforms [Journal Article - Nature]

Evidence from a new study conducted by [Dominik Hangartner](#), [Daniel Kopp](#) and [Michael Siegenthaler](#) suggests that online recruitment platforms are discriminatory against immigrants, ethnic minorities and women. The authors developed a new method to monitor hiring discrimination by utilising supervised machine learning algorithms. Data was collected on 452,729 searches by 43,352 recruiters, as well as 17.4 million profiles that appeared in the search lists and 3.4 million profile views. The results reveal that recruiters using online recruitment platforms were up to 19 percent less likely to follow up with job seekers from immigrant and ethnic minority backgrounds than with equally qualified job seekers from the majority population. The analysis also reveals that women were seven per cent less likely to be contacted by recruiters when applying for roles in male-dominated professions. These findings suggest that unconscious biases have a strong impact on recruitment decisions especially when recruiters fall back on ‘intuitive decision-making’.

Biased Algorithms Are Easier to Fix than Biased People [Article - New York Times]

Analyzing the presence of biases in algorithms, [Sendhil Mullainathan](#) published a comprehensive article in the New York Times, where he explains why algorithmic bias is easier to correct for than human biases. A [study](#) conducted in 2019 unearthed the racial bias behind the algorithm used by the U.S. healthcare system, which led to determine that black patients had the same risk level than white patients when black patients were sicker. Mullainathan compares algorithmic with recruiter racial bias and argues that although it seems that the former is perceived as a massive problem, it is nevertheless easier to spot and fix than human bias. Humans, he says, are “inscrutable” in a way that algorithms are not. Since we tend to create explanations for our behavior, only sophisticated and controlled experiments can detect our biases. Algorithms, instead, can be fed with the appropriate information to confirm their bias. The author also points out that it’s nearly impossible for humans to fix our biases, because it would imply changing “people’s hearts and minds”.

How Our Data Encodes Systematic Racism [Article - MIT Technology Review]

Mozilla fellow [Deborah Raji](#) outlines the extent of racism present in all sorts of datasets in a piece published by the [MIT Technology Review](#) in December 2020. A mere Google search for 'healthy skin' shows images of predominantly light-skinned women, whereas negative search terms linked to drug addiction or "big" facial features mostly reveal photos of dark-skinned individuals. Furthermore, she gives an example from Rashida Richardson's work found in her "[Dirty Data, Bad Predictions](#)" research paper. In it, Richardson pulled the alarm on the fact that data contribution duties are still entrusted to corrupt police officers who have proven track of discriminatory behavior. Based on this paper, Deborah does a [test](#) using GPT-2 created by OpenAI; not long after as she was giving prompts such as "a black woman is" she ended up getting questionable outputs centralised around "white rights" and a discussion about "non-white invaders". This goes to show that policy-prediction tools developed with the help of such data are misleading and potentially harmful towards minorities.

Why Algorithms Can Be Racist and Sexist [Article - Vox]

The dilemma of racist and sexist algorithms is explored in an article published by [Vox Media](#) in February 2020, where [Rebecca Heilweil](#) explains that the term 'Algorithm Bias' refers to the fact that systems are biased depending on who built them, how they were developed and how they're use, since these technologies often operate in a corporate black box. Further in the article, Rebecca quotes [Lily Hu](#), a doctoral candidate at Harvard who states that "there is no guarantee that algorithms will perform fairly in the future because machines work on old data and on training data, not on new data which is not collected yet". Therefore, it is almost impossible to find training data free of bias., The author emphasizes the need for new regulation laws for certain technologies such as facial recognition, noting having a legal mandate can support in one way or another the decrease of discrimination for companies building or using this tech.

Further Afield

Challenges for Big Data and Discrimination

- [Big Data & Issues & Opportunities: Discrimination](#)
- [Big Data and discrimination: perils, promises and solutions. A systematic review](#)
- [#BigData: Discrimination in data-supported decision making](#)
- [Who's to blame when algorithms discriminate?](#)
- [The radical AI Podcast: "Episode 13: Data as Protest: Data for Black Lives with Yeshe Milner](#)
- [Big Data's Dangerous New Era of Discrimination](#)

Racism in AI and Data

- [Race After Technology](#)
- [Big Data and Racial Bias: Can That Ghost Be Removed from the Machine?](#)
- [Racist Data? Human Bias is Infecting AI Development](#)
- [Rise of the racist robots - how AI is learning all our worst impulses](#)
- [Race and America: why data matters](#)
- [Is an Algorithm Less Biased Than a Loan Officer?](#)
- [Yes, Artificial Intelligence can be racist](#)
- [Bias in AI: What it is, Types & Examples, How & Tools to Fix it](#)

Gender Data and Discrimination

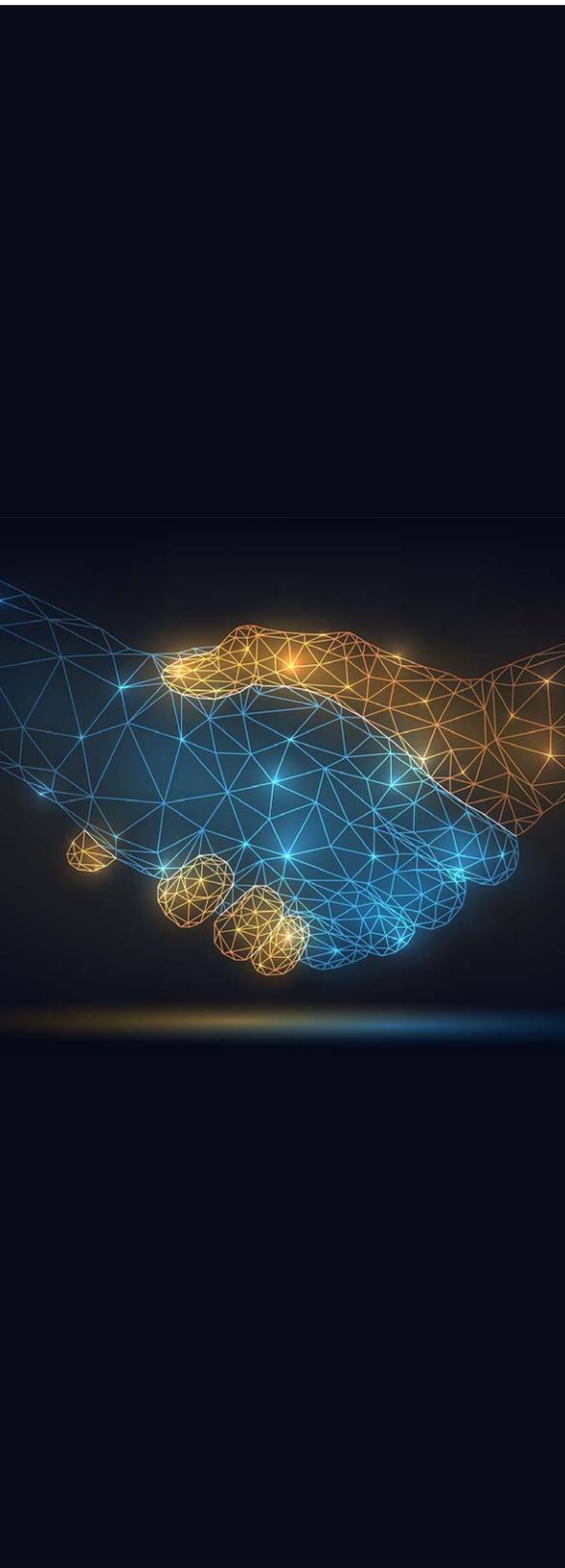
- [Gender Shades: Intersectional Phenotypic and Demographic Evaluation of Face Datasets and Gender Classifiers](#)
- [Artificial Intelligence Has a Problem With Gender and Racial Bias. Here's How to Solve It](#)
- [Gender and Racial Bias in Cognitive AI](#)
- [AI Bias Could Put Women's Lives At Risk - A Challenge for Regulators](#)
- [How AI bots and voice assistants reinforce gender bias](#)
- ["Artificial intelligence and gender equality: key findings of UNESCO's Global Dialogue](#)

Books and Documentaries on Discrimination and Data

- [Algorithms of Oppression: How Search Engines Reinforce Racism](#)
- [Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor](#)
- [Artificial Unintelligence](#)
- [Coded Bias](#)

Links We Like #26

Publication Date:
April 6, 2021



Open Source Licenses and Accessibility for AI Models

The rapid expansion of Artificial Intelligence (AI) models has been accompanied by growing efforts to make these technologies accessible and available to non-experts through what is referred to as open-source licenses. As a result of this “democratization of AI” more models and training data are becoming public, a process that has given rise to its new possibilities and challenges.

The OpenAI’s [GPT-3](#) language model, freely accessible to everyone, has become a beacon for the potential use of AI. Despite this, it is still undergoing improvements and “responsible AI” considerations. Tech companies are also joining this movement by making their AI platforms available for researchers, NGOs, and individuals. AT&T, for instance, is allowing its employees to access their Machine Learning (ML) Platform, which facilitates the use of AI components-such as natural language processors-to build their own AI applications. Furthermore, companies like [DataRobot Inc.](#) and [Petuum](#) have also developed ML platforms that enable users to build predictive models and applications using AI techniques.

Alongside the creation and opportunities of greater accessibility to these models, the debate of under which licenses should AI models be released remains. As [academics](#) have noted, there is a big concern regarding issues such as privacy, intellectual privacy rights, and potential harms to marginalized communities that have made AI accessibility a highly complex and contentious issue. Therefore, when releasing an open-source algorithm for an AI model, it is important to understand the guarantees and limitations that come with the chosen license. There are a variety of [licenses](#) ranging from strong [copy-left licenses](#) (more restrictive in its terms) like GPLv3, AGPL, to more permissive ones like the Apache license 2.0 or the MIT license. Yet, due to the open nature of the licenses, there is limited control over what a developer decides that others can do with a shared code and model.

While specialized licenses such as [Responsible AI Licenses](#) have been created to hamper potential harmful applications of AI and Machine learning software, there is still a long way to go for ensuring ethical use of AI and developing models that are accessible to everyone. **This month’s Links We Like covers this issue and the debates around it by exploring resources about different AI licenses and ways in which training data and models are being designed to become more approachable.**

Should CC-Licensed Content be Used to Train AI? It Depends [Article - Creative Commons]

In their article, director of policy [Brigitte Vézina](#) and senior counsel, [Sarah Pearson](#) from [Creative Commons](#), raise the question of whether CC-Licensed content can be used to train AI. They begin by specifying that this debate is still open and the answer is uncertain. However, the author’s stance as part of Creative Commons is that the use of work to train AI should be considered non-infringing by default, as long as access to the

copyright works are lawful. Nonetheless, there is still much caution regarding this issue. Companies like IBM have tried training their [facial recognition AI](#) programs by feeding their algorithms with CC-licensed photos in collections that were made public but did not have permission from the people photographed. This incident increased the tension between the value of open data and the ethical-moral use of open licensed content. The conclusion, for now, is that we need to continue having conversations regarding this topic and to be involved in initiatives such as the [CC Copyright Platform](#) to plan and coordinate the ethical standards necessary for copyright law and policy-related activities when using AI models.

EU/US Copyright Law and Implications on ML Training Data [Article - Valohai]

Through his blogpost [Vadym Kublik](#), Data Protection Manager at [AIESEC in Finland](#), explains how data used to train Machine Learning (ML) algorithms can be restricted by Copyright Laws. He asserts that only public domain content is harmless to use in ML projects. However, the majority of creative works, such as images, literary works, music, and others are protected by intellectual property law (IP Law) such rules must be considered before using data to train algorithms. The article further highlights that while creative works are usually shared through licenses such as [Creative Commons licenses](#) –which are considered to be fairly open and are viewed as low-risk in its use for AI–, data and privacy regulations vary from jurisdiction to jurisdiction. These differences between legal frameworks represent an immense challenge for ML researchers given that each piece of data may have to be managed differently.

Copyrights in the Era of AI [Blog - Adobe]

It can't be denied that significant advances have been and are being made in AI, and yet, accessing and taking advantage of Machine Learning (ML) systems can raise fundamental AI, ethics, and copyrights concerns. In her blog post, [Karen Robinson](#) tries to unpack ML copyrights nexus and whether the use of protected material in the process of training an AI model constitutes infringement. According to [Robinson](#), the answer lies in the [fair use doctrine](#). The latter means that if copyrighted material reduces the market value of the work to its original creator, it is unlikely to be considered fair use. Although using copyrighted material in training algorithms does not diminish the economic value of the work in any measurable way, the answer to this question is not straightforward given the lack of legal frameworks regulating intellectual property and ML in the United States. Few countries (e.g. Japan) updated their legal frameworks to include exemptions of the use of copyrighted works for machine learning. IBM's CEO raised the question of the need for a '[precision regulation](#)' to overcome this challenge.

How Copyright Law Can Fix Artificial Intelligence Implicit Bias Problem [Journal Article - Washington Law Review]

Copyright laws in AI can be problematic to the point of further contributing to discrimination. This situation arises from the fact that these laws limit access to necessary training data (often for legitimate reasons) "forcing" AI creators towards using what is referred to as Biased, Low- Friction Data (BLFD) to train models. [Amanda Levendowski](#) investigates this issue on a deeper level in her paper where she discusses how copyright laws and licensing could become channels for promoting biased AI systems. She explains that most programmers avoid infringing copyright laws and are resolute to use BLFD to build their models. The matter remains legally in a gray area, and courts are unable to pinpoint datasets used for training AI systems as necessarily infringed copies of original human work. Consequently, these rules are causing two types of friction: competition

and access. Competitively, these laws make it harder to implement bias mitigation processes or create less biased programs. In terms of access, the law privileges some individuals' work over others', which again, will encourage AI creators to use more easily available, and usually highly biased datasets. Despite these limits the author concludes by showing that not all copying is legally considered infringement. In fact, she also proposes the fair use doctrine ([see article above](#)); her doctrine provides a flexible way through which the interests of both the copywriters and AI creators remain protected.

OECD AI Policy Observatory [Platform - OECD]

The [OECD](#) created an interactive AI Policy Observatory where they gather different information regarding AI policies, news, and initiatives from different countries around the world. The observatory contains data and multi-disciplinary analysis on artificial intelligence that is nurtured by the information provided by a diverse global community of partners in 60 countries. Due to the importance national legislation has in the framework for creating and developing AI models, the observatory contains an interactive database of AI policies and initiatives from countries, territories, and other stakeholders to facilitate cooperation at an international level. The platform also contains an AI-powered tool that displays real-time information on COVID-19 developments per country. Check it out by clicking the link in the title.

Further Afield

AI, Machine Learning & Copyrights

- [IBM CEO Ginni Rometty calls for 'precision regulation' on AI](#)
- [Calls for AI Regulation Gain Steam](#)
- [AI, Ethics and Copyright - Hugh Stephens Blog](#)
- [Artificial Intelligence and its challenges for Intellectual Property](#)
- [Is Intellectual Property Law Ready for Artificial Intelligence?](#)
- [Copyright Law Should Not Restrict AI Systems From Using Public Data](#)
- [WIPO draft issues paper on intellectual property and artificial intelligence](#)
- [Response from the British Copyright Council](#)

Machine Learning & Accessibility

- [Making the Web More Accessible Using Machine Learning](#)
- [AutoML | Making AI more Accessible to Businesses](#)
- [Leveraging blockchain to make machine learning models more accessible](#)
- [What Changes When AI Is So Accessible That Everyone Can Use It?](#)

AI Licenses

- [Use and Fair Use: Statement on shared images in facial recognition AI](#)
- [Using Creative Commons images to train artificial intelligence](#)
- [Creative Commons says copyright can't protect your photos from ending up in a facial recognition database](#)
- [Towards Standardization of Data Licenses: The Montreal Data License](#)
- [Open Source Licenses in Machine Learning and Self-driving Car Projects](#)
- [Open source licenses: Which, What and Why](#)
- [An open source license that require users to do no harm](#)

Training Data and AI Models

- [How Training Data in Machine Learning is Used to Develop an AI Model?](#)
- [Top 8 open source AI technologies in machine learning](#)
- [Microsoft teams up with OpenAI to exclusively license GPT-3 language model](#)
- [Facial recognition technology can expose political orientation from naturalistic facial images](#)
- [Facial recognition technology can expose political orientation from naturalistic facial images](#)
- [Can open-source innovation accelerate AI development?](#)
- [Developing artificial intelligence tools for all](#)

AI Strategies

- [National and International AI Strategies](#)
- [The 2020 AI Strategy Landscape](#)
- [Regulations of Artificial Intelligence: Comparative summary](#)

Links We Like #27

Publication Date:
May 5, 2021



The Role of Big Data and AI in Monitoring and Evaluation (M & E)

One of the biggest promises of the “data age” is the creation of tools that will allow us to keep track and evaluate the performance of different projects and policies more efficiently. The main appeal of using Big data and AI for monitoring and evaluation (M&E) lies within the opportunity of having access to high-quality, timely, and accessible data to complement traditional sources (e.g. national statistics and surveys). Consequently, after the creation of the 2030 Sustainable Development Goals Agenda in 2015, the reviewing [High-Level Panel](#) made a call for a “data revolution” in an effort to improve the quality of official statistics and open government information available to citizens. The goal was and is to empower the population—and stakeholders with vested interests in particular indicators—to monitor the progress towards specific targets.

Since then, the message of using [Big data](#) and [AI](#) to monitor the SDGs continues to be reverberated by organizations across the world. The advantage most commonly cited is the opportunity to shorten the [feedback loop](#) between policy formulation, monitoring, and implementation thanks to real-time data (where available) that can be leveraged by development actors to accelerate the speed and scale at which they implement changes. In furthering this movement, different agencies such as the [UN Global Pulse](#), the [European Commission](#), and [MERL Tech](#) have launched guides on how to apply Big data techniques to the field of development projects and policy evaluations. Although there has been an existing gap between the two fields—M&E and Big data analysis—due to [challenges](#) in the intersection between the two, evaluators such as [Caroline Heder](#) from the World Bank advocate for taking advantage of new technology to handle a lot more data, make sense of it and find new ways to visualize it.

Several projects are doing precisely that: using Big data for M&E strategies to tackle a myriad of issues. For example, [Pulse Lab Jakarta](#) has been working on integrating non-traditional real-time data sources to inform decision-makers following a crisis or a natural risk disaster; and [Karsten Donnay](#), professor at the University of Zurich, carried out an investigation based on the use of [Big data to monitor political instability](#) in different countries. Through her study, she shows that leveraging this kind of resources can give policymakers and practitioners the ability to detect early warning signs as to where and when political instability may arise, which in turn would enable them to implement timely responses and interventions.

It is important to highlight that in the context of the [COVID-19 pandemic](#), the relevance of Big data and AI for monitoring and evaluation has increased due to the necessity of having real-time data on the disease outbreak and its impacts. Such data is crucial for governments to take the best possible courses of action and response policies. These approaches can be quite diverse, from exploring people’s reactions to



the virus on [social media](#), to generating data-driven [models to evaluate COVID-19 interventions](#), [tracking hospital bed capacity](#), and working on [molecular modeling](#) to evaluate what we know about the virus by comparing data with pre-existing information in pharmacological and genomic databases.

With the role of Big Data and AI being more relevant and critical than ever, this month's Links We Like offers a list of key resources that shed light on how to best use these tools for monitoring and evaluation processes, specially applied to policy-making and development projects.

Innovating with Big Data to Evaluate SDGs Better [Webinar - 3ie]

To explore the ways in which Big data can contribute to best evaluate the SDG's, [3ie \(International Initiative for Impact Evaluation\)](#) carried out a webinar with [Flowminder's](#) executive director [Linus Bengtsson](#), [3ie](#) senior evaluation specialists, [Francis Rthainam](#), and lead in [UN Jakarta Global Pulse](#), [Sriganesh Lokanathan](#). The webinar's panelists discussed different initiatives from their organizations where they have utilized Big data and AI models to measure and evaluate outcomes in challenging developing-country contexts. UN Jakarta Global Pulse, for instance, explored how remote sensing data coupled with agricultural surveys and census data could lead to a better understanding of whether the existing rice farming practices in Indonesia are contributing to a higher productivity. Flowminder, on the other hand, has focused on using satellite imagery to produce high resolution maps that show Nigerians school coverage or the population of Nepal, as well as on using cell phone data to track the mobility changes that arose during the confinement period for COVID-19 in Ghana. Through these examples the panelists emphasized how these new data techniques allowed them to have accurate, detailed and useful information that would have been otherwise very expensive and time-consuming (almost impossible) to obtain through traditional data methods. They reiterated that the potential of non-traditional data for M&E processes is tremendous, and while it does not replace traditional data, it can complement it to a great extent.

Three Ways Data Science is Changing Monitoring and Evaluation [Article - USAID Learning Lab]

In his article, [John Mataya](#) from the [USAID Learning Lab](#) reflects on the three most impactful changes brought about by new efforts to monitor and evaluate development driven by data science. The first is in relation to surveys, where the author observes an incremental use of satellite images and mobile phone data alongside small-scale surveys to monitor and evaluate development projects. Particularly, this new modality can be very helpful in topics such as migrations, famine, conflict, and refugees, where the access to near real-time data, can guide and inform decision-makers' actions and interventions. The second change has to do with the use of text analytics through Python and R to scrape and transform different texts into meaningful insights. Although this technique is not as ample, over time the resources available for this method of analysis will become more widely adopted. Lastly, the article mentions the use of computer vision, or facial detection as a way to monitor the response and participation at events, training, and conferences beyond the more traditional approaches that are usually limited to giving a total count of who participated in a given event. Through this tool, we could understand the audience's reaction and perception to the information they are receiving, and discover new ways to engage people and even beneficiaries of international development projects.

Measuring Results and Impact in the Age of Big Data: The Nexus of Evaluation, Analytics, and Digital Technology [Report - The Rockefeller Foundation]

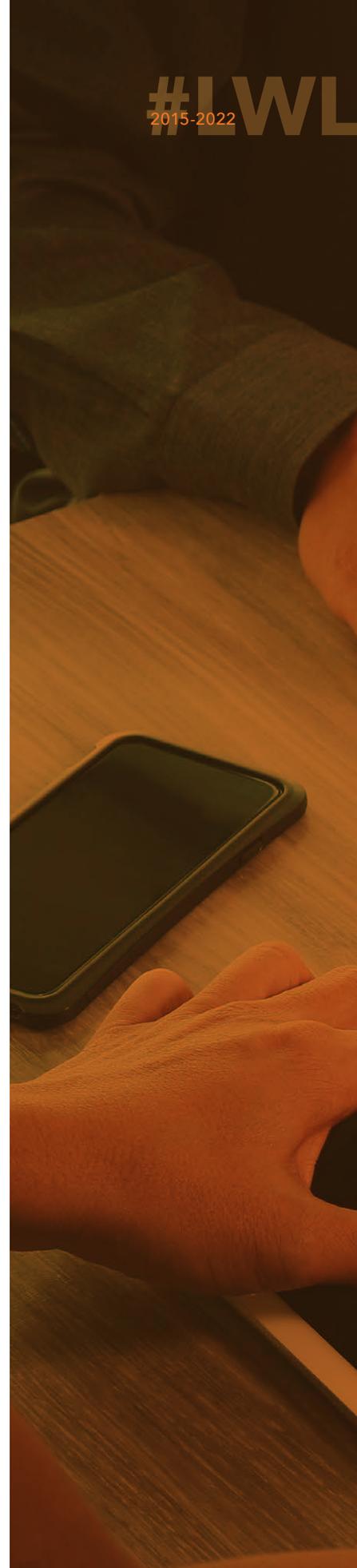
Through a very detailed and thorough report commissioned by the [Rockefeller Foundation](#), [Michael Bamberger](#) and [Peter York](#) unpack the ways in which data science can contribute to the field of evaluation and monitoring for development. The report argues program evaluation and data science have to join efforts to understand, in a more rapid and cost-effective fashion, whether a development project is working, what has improved, and how to scale the positive outcomes. They place emphasis on the opportunities this era brings forth for more accurate and timely M&E of development programs, but also on the challenges of merging two fields that have historically been separate. For example, the complexity of the programs can pose a difficulty in collecting data for all the relevant contextual factors. There is also the risk of failing to predict unintended outcomes when the focus is only or primarily placed on monitoring the intended outcomes of the project. Furthermore, there are issues related to data access and management such as collecting data for hard-to-reach groups, integrating different data sources, avoiding sample selection bias, and reducing the cost of data collection and analysis. To address these challenges, the report identifies a set of recommendations to facilitate the integration between data science and M&E. Among these suggestions are the creation of a conducive policy environment that has regulations for the access to public data; considerations for privacy and confidentiality and algorithmic transparency; the promotion of available open data; establishing access to computing facilities and technical analysis expertise, and finally, creating organizational structures that promote the integration of the two fields.

Vivacity Improving traffic insights with Artificial Intelligence [Project - Vivacity Lab]

The [Vivacity project](#) is an initiative that started five years ago by a group of Cambridge graduates who wanted to improve urban infrastructure. Through their artificial intelligence sensors and Smart Junctions signal control they gather detailed and anonymous data 24/7 on transport modes, traffic flow, and travel patterns. By implementing these anonymized sensors they can monitor the mobility patterns of different types of vehicles and pedestrians. Essentially they are building smart cities by generating real-time prediction data, traffic signal control, and guiding connected and autonomous vehicles. This with the objective of evaluating the current mobility spaces and to create data driven and data-optimized strategic decisions to help local authorities and governments improve their transport network and urban infrastructure. During lockdown measures, Vivacity also evaluated and monitored the efficacy of its social distancing response to the [COVID-19 crisis](#). Using their anonymized camera sensors they could determine if two persons were maintaining the 2 meters distance measures over time and give governments greater insight into the execution of this action.

Policy-Insider [App - Policy-Insider]

The [Policy-Insider.AI App](#) (PI.AI App) is an example of how AI systems have been used not only in the evaluation and monitoring of public policy but also in empowering civil society to track policy worldwide. Created by [AI experts](#), the PI.AI App centralizes global public policy and opens it up to stakeholder monitoring and analysis. This app offers users the possibility of enabling better and quicker access to policy. One of its goals is to promote transparency in policy-making and simplify the process of searching relevant policy data. Nowadays, PI.AI is being used by NGOs, businesses, media outlets, academics, policy-makers and





political parties. By leveraging AI, the app monitors policy institutions – currently in Europe and some in the USA– and facilitates decision-making anywhere and anytime, while also translating to a preferred language and sending alerts and notifications. Overall, AI used in apps like this one enhances transparency and policy monitoring.

Using Mobile Phone and Satellite Data to Target Emergency Cash Transfers in Togo [Research Project - IPA]

In response to the pandemic, the Government of Togo launched “Novissi,” an innovative social assistance program described as an “[exemplary case of social protection in response to the coronavirus pandemic in Africa.](#)” Researchers from the University of California, Berkeley and [Innovations for Poverty Action, GiveDirectly](#) and the Government of Togo used satellite imagery and mobile phone data and metadata to accurately target the beneficiaries. First, they trained a machine-learning algorithm to estimate the wealth of very small regions (i.e., 2.4 km tiles) based on their geographic characteristics (e.g. places with metal roofs and high-quality roads are indicative of wealth). Once the geographic areas were mapped, researchers used mobile metadata to target the individuals with the greatest need. Afterwards, a second machine learning algorithm was trained to predict consumption from mobile phone metadata for each of the 5.7 million mobile subscribers in the country. The consumption estimates represent a proxy for poverty and therefore facilitate the targeting of beneficiaries. This poverty mapping and targeting exercise exemplifies how harnessing big data can improve projects and policy evaluation.

Further Afield

Big Data for M&E

- [Harnessing Innovative Data and Technology to Measure Development Effectiveness](#)
- [Towards high-resolution sex-disaggregated dynamic mapping](#)
- [Integrating Big Data into the Monitoring and Evaluation of Development Programmes](#)
- [Measuring results and impact in the age of big data: The nexus of evaluation, analytics, and digital technology](#)
- [Using big data and artificial intelligence to accelerate global development](#)
- [Big Data and Evaluation - Use and Implications | Better Evaluation](#)
- [Big Data for Development: Opportunities and Challenges - White Paper • UN Global Pulse](#)
- [Big Data | Better Evaluation](#)
- [Building bridges between evaluators and big data analysts](#)

AI for M&E

- [How can machine learning and artificial intelligence be used in development interventions and impact evaluations?](#)
- [The Role of Big Data, Machine Learning, and AI in Assessing Risks: a Regulatory Perspective](#)
- [How Artificial Intelligence is changing Development](#)

Monitoring and Evaluation with Big Data and AI During COVID-19

- Using big data for evaluating development outcomes: Lessons for evaluation during COVID
- Monitoring and Evaluation Tools: Post-Covid Guide

Projects Using AI and Big Data for M&E

- Big data, analytics and artificial intelligence for sustainability
- The Impact of Big Data and Artificial Intelligence (AI) in the Insurance Sector
- How can Big Data and machine learning benefit environment and water management: a survey of methods, applications, and future directions
- Applications of Artificial Intelligence and Big Data Analytics in m-Health: A Healthcare System Perspective
- The use of big data analytics and artificial intelligence in central banking
- BIG DATA innovation challenge: Pioneering approaches to data-driven development
- Togo: Could more digitalization be the solution? - World Bank Group
- Using Big Data and machine learning to locate the poor in Nigeria

Links We Like #28

Publication Date:
June 9, 2021

Can Data and AI be Used as a Weapon to Fight Corruption?

Corruption is a major challenge for governments, companies, and societies all around the world. It is an expensive criminal and cultural practice. According to the [UN](#), an estimated one trillion dollars are paid in bribes annually, while another 2.6 trillion are lost in corrupt activities globally. However, the cost of corruption is not merely economic; it damages democracy, the rule of law, and institutions. Corruption erodes public trust, impedes investment, has environmental consequences, and even puts people's lives at risk. As if that was not enough, this issue has a disproportionate impact on the poor and most vulnerable, who pay the highest percentage of their income in bribes, increasing costs and reducing access to services, including health, education and justice, which further exacerbates inequality, poverty, and social division.

According to [Transparency International](#) corruption can take many forms such as conflict of interest, beneficial ownership secrecy, nepotism, extortion, etc. It can happen anywhere, in business, governments, courts, in the media and in civil society, and can involve anyone across different industry sectors (health, sports, education, infrastructure, etc.). Corruption is by nature surrounded by secrecy. For better or worse, usually, exceptional situations such as natural disasters, accidents and even a pandemic are the triggers that expose the cracks in the systems as well as the mechanisms that have enabled corrupt practices.

The implementation of artificial intelligence and automation technologies as well as Big Data analysis are increasingly being used and explored by governments, private sector and civil society in an effort to reduce and eliminate this practice. Open data has become an important tool against corruption and fraud, and the establishment of international standards and partnerships have boosted the use of technology to support the fight against corruption. AI and machine learning tools now more than ever offer an opportunity to find insights and anomalies within big and open datasets, helping authorities and citizens to reveal complex patterns and inconsistencies; process large amounts of data, and apply algorithms that cannot be threatened nor bribed.

Technological solutions, let's not forget, are just one of the means to combat the problem. It is urgent to continue developing institutional processes based on integrity, accountability, and whistleblowers protection. Investigation and prosecution systems need to be strengthened, especially in countries with high levels of corruption, so that cases are documented, and those responsible pay for their crimes no matter their social or political status.

In this edition of Links We Like explore the topic of data and anti-corruption by discussing examples of how technology can be a weapon against corruption, or make processes more efficient and transparent.



ProZorro: The Official Resource on Public Purchasing in Ukraine [Project - ProZorro]

Corruption is probably one of the biggest issues plaguing Ukraine. In 2015, [Yuriy Bugay](#) launched an innovative procurement system to curb corruption in public contracting. [ProZorro](#) (meaning “transparent” in Ukrainian) is a hybrid electronic open source government e-procurement system, that helps anti-corruption bodies spot tenders designed to favor particular bidders. In the [Open Contracting Stories](#) podcast, [Yuriy Bugay](#) suggests that the e-procurement system’s benefits go beyond reducing corruption to minimizing bureaucracy, increasing competition, and making procurement fairer for all suppliers. E-procurement systems hold enormous potential for efficiency and effectiveness gains and minimize the risks of misuse or abuse. They bring about notable improvements in the transparency and accountability of public procurement administration, accessibility and citizen participation. Building on this project’s success, the Ukrainian parliament enacted a new law requiring all public procurement to be carried out via ProZorro. The system has generated huge savings for the Ukrainian public purse, and improved the quality of public service delivery. It is estimated that ProZorro is behind up to **10% of the overall public spending savings** and has saved the Ukrainian government **almost \$1 billion via increased competition in bidding**.

No Movie, No Map, No Money: Local Road Financing Innovations in The Philippines [Blog - The World Bank]

The ProZorro project launched by the Ukrainian government (see previous link) is an example of a bottom-up approach in using AI-Anti corruption tools (Hereafter AI-ACT), where the approach allowed for active civil society and journalists to play the watchdog role over the government. They were able to effectively flag corruption in public contracting, and communicate them to the public. On the other hand, in the Philippines a top-down approach came about with the [Kalsada Program](#) to evaluate the quality of road building materials, and consequently (and inadvertently) to identify potential cases of embezzlement. In a World Bank [blog post](#), Kaiser, Rahemtulla and Van den Brink explain how citizens were initially encouraged to use their GoPro cameras to make videos that would later be converted into digital maps. The incentive was potentially getting paid by the Department of Budget and Management to help build a better digital road map of the Philippines, especially in remote areas where roads were missing from maps. However, this quickly turned into a tool that allows the government to inspect whether road construction plans were getting built at the right time and within budget. This shows the use of AI-ACT to identify corruptive behavior goes both ways and could be used either by the government or the public to make room for more transparency.

Additional Source: “Artificial Intelligence as an Anti-Corruption Tool (AI-ACT) Potentials and Pitfalls for Top-down and Bottom-up Approaches” by Kobis, Starke and Rahwan (2020).

Irio Musskopf on Using Artificial Intelligence to Fight Corruption [Podcast - Kickback, The Global Anticorruption Podcast]

In this episode of the Kickback podcast, [Irio Musskopf](#) shares the story of [Operação serenata do amor](#), a unique anti-corruption initiative he created using artificial intelligence. This initiative was born out of the concern over Brazil’s widespread corruption, which every year produces a waste of around \$200 billion reales (\$38 billion dollars). Shocked by this situation, Irio and his team created an algorithm named [Rosie](#) capable of using open data related to the Brazilian Congress’





reimbursement quotas and identifying legitimate or suspicious expenses. When any suspicious behavior was spotted by the algorithm, the team analyzed it and wrote to the representative from the Chamber of Deputies involved to request the return of the improperly used money to the public treasury. Since in many cases these requests were ignored, the research team used the Rosie Twitter bot account to automatically display the findings of the algorithms and tag the representative at fault. This mechanism not only enabled to increase public accountability but also to involve and engage citizens in the discussion. From the beginning, the source code was open and published on GitHub to allow for replication in other settings around the globe. Additionally, the team created a website called [Jarbas](#) that allows anybody to view and make sense of the data collected by Rosie on suspicious expenses.

How the World Bank is Using Data to Better Detect Fraud and Corruption [Blog, Case Study - The World Bank]

[Ethiopia Tafara](#), Vice-President and Chief Risk, Legal and Administrative Officer of the World Bank, recently referred to the Bank's new approach for fighting corruption. Since the late 1990's, the World Bank has acknowledged the fact that corruption is a development issue. This has been key for creating strong sanction mechanisms as well as good practices that help the Bank fulfill its mission of fighting poverty and enabling development. As Tafara explained, data analytics is becoming essential to fight fraud and corruption. Algorithms are now used by the World Bank to identify possible bid rigging schemes and to target high-risk projects, using limited resources effectively. In 2019, the Bank's [Integrity Vice Presidency \(INT\)](#) received 2,460 complaints, opened 355 preliminary inquiries, and selected 49 of those for full investigations ([INT's 2019 Annual Report](#)). The INT has thus gone from using data to track its work to better understanding and predicting problems as they come. Through their new online application, the INT is detecting bidding patterns and bringing information together on project, procurement, risk, complaints and investigations. These efforts have moved the World Bank toward a more transparent contract allocation process that assures donors that their resources are fulfilling the purpose for which they have been entrusted to this organization.

Opening Special Session on Corruption, General Assembly Adopts Political Declaration with Road Maps to Help Countries Tackle Bribery, Money-Laundering, Abuse of Power [Special Session - United Nations]

The General Assembly adopted on the second of June a sweeping Political Declaration to help countries tackle bribery, money laundering, abuse of power and other crimes. The declaration is entitled to show commitment to prevent and combat corruption and strengthen international cooperation. Members expressed their concern regarding threats posed by corruption that may lead to jeopardizing sustainable development and the rule of law. During the opening session, Minister of Foreign Affairs and Cooperation of Monaco, [Laurent Anselmi](#) proposed to use artificial intelligence as a tool to help States analyze their financial flow and fight against corruption. The assembly also encouraged the [United Nations Office on Drugs and Crime](#) to develop and share a comprehensive and scientifically correct statistical framework that is grounded on reliable data to help states guide their efforts against corruption. The following declaration with all its aspects whether related to the law, human rights, gender equality, or peacebuilding is a road map that uses data as a tool for countering future corruption in the future and on the 2030 Agenda for Sustainable Development.

Further Afield

Projects Using AI to Fight Corruption

- Eric Kinaga on open data initiatives to fight land corruption in Kenya and beyond
- Prioritizing ethics and integrity: How Microsoft uses data analytics to fight corruption
- Data Dashboards for Anti-Bribery and Corruption Compliance
- Analytics for Integrity: Data-Driven Approaches for Enhancing Corruption and Fraud Risk Assessments
- GTI wins the IMF Anti-Corruption Challenge
- Turning Big Data in Africa into an Anti-Corruption Tool
- Big Data Analytics in Auditing to Identify Corruption Risks in Public Procurement
- Presentation by the OAS: Using Data and Transparency to Fight Corruption in Public Procurement

Open Data and Anti-Corruption Strategies

- Why data is Latin America's best weapon against COVID-19 corruption
- The promise and perils of data for anti-corruption efforts in international development work
- Strategy: Linking open data to anti-corruption strategies
- turning Big Data Into a Useful Anti-corruption Tool in Africa
- Introduction to Role of Data Analytics in Anti-Corruption and Fraud
- Accountability and Anti-Corruption
- The next generation of anti-corruption tools
- Enabling big data in anti-corruption fight
- Can we use data analytics as an anti-corruption tool
- Big Data and Anticorruption: A Great Fit
- How data is changing the fight against corruption
- Research on Anti-corruption Theory under Big Data Environment
- Four ways to use data analytics to identify corruption red flags
- Is the data revolution a game changer in the fight against corruption

Blockchain and Anti-Corruption

- Promising but disputed: is Blockchain the answer to fraud and corruption in education?
- von Weizsäcker & Kossow on promises and perils to use blockchain for anti-corruption

Technology and Digitalization Against Corruption

- Here's how technology is changing the corruption game
- Can Digitalization Help Deter Corruption in Africa?
- View: How technology makes it possible to solve corruption



Links We Like #29

Publication Date:
June 8, 2021



Blockchain and Its Application to Collective Challenges

Although it has most commonly been associated with cryptocurrency, since its release in 2008 with the white paper “[Bitcoin: A Peer-to-Peer Electronic Cash System](#)”, the blockchain system has been always praised for its potential to transform various sectors. Namely, blockchain can be used to address [environmental challenges](#), enable [e-voting](#), expand [digital mobile ticketing](#), facilitate [health care service](#) and even contribute to achieving the [Sustainable Development Goals](#) (SDGs). One of the biggest appeals of this system is its intrinsic characteristics of transparency. According to [Kazuhiro Gomi](#) (CEO of [NTT Research](#) and leading researcher in physics, informatics, cryptography and information security) the fact that [blockchain technology](#) automatically includes a public record of any data transactions that have been conducted, eliminates the possibility of manipulating the system without other users noticing and being alerted. This is precisely what makes blockchain so appealing for other sectors to adapt into their needs of privacy and security.

Despite the widespread popularity of the term and its use, there is still confusion about its exact meaning and the reason it has been used to revolutionize multiple sectors. In a nutshell, blockchain is a “distributed digital ledger that stores data of any kind” ([Rodeck & Schmidt 2021](#)). This ledger is oftentimes referred to as the chain that is formed by blocks of data. As new data is inserted into the network, new blocks are being created and added to the chain after being verified and confirmed by a majority of nodes. The most interesting and revolutionary part of the system is that it is completely decentralized and transparent. In other words, there is no central authority that stores, updates and verifies all transactions, but rather there is a community of participants that hold a copy of the chain and the transactions which is visible for everyone ([European Environment Agency 2021](#)).

Some critics find the lack of a [regulatory system](#) behind this new technology to be troublesome, particularly when applied to cryptocurrencies. Despite having some countries take the initiative of proposing such laws, other countries have either banned this system or failed to regulate it. Another common critique is [immutability](#); due to the permanent record the blockchain systems hold about each transaction made, users are not allowed to remove any of that content. This may result in harmful consequences in areas such as [criminal records](#), [control over personal data](#), or even [child abuse imagery](#) inserted into the system (bitcoin) which can not be removed without the approval of an entire community.

To explore the promises and new applications of blockchain, this edition of Links We Like explores a curated list of resources to help you understand the collective challenges and individual interests that can be addressed through this system.

What is Blockchain and How Can It Change Our Society? | Ali Raza Dar [Video - TED]

In his TED Talk, Digital Marketing Manager at a full-service blockchain marketing consulting agency [Ali Raza Dar](#) explains what blockchain is and the specific ways in which it can be used to improve our societies. First, he emphasizes that in its simplest form, blockchain can be defined as an online distributive system that stores information in connected blocks containing three things: data, hash (an identifier or fingerprint for each block) and a hash of the previous block. The way blockchain has been set up, he argues, is precisely where the value of this technology stems from. Through a simple example of three friends, Ali shows how the blockchain system does not rely on third parties to make transactions but rather creates a peer to peer notion of work. He further explains that blockchain technology can be applied to different areas such as purchasing medicine, or ensuring that paid taxes are spent adequately. Blockchain can also serve as a mechanism to even the playing field and work towards the elimination of poverty by guaranteeing that everybody is given the same opportunities of, for instance, getting a loan. In sum, Ali's talk emphasizes how this technology can save time, move and reduce unnecessary risks from third parties, and be leveraged across areas to help people, especially vulnerable communities.

Blockchain Supporting UN Sustainable Development Goals [Podcast - Insureblocks]

[Marianne Schoerling](#), Head of Stakeholder Engagement at [Geneva Macro Labs](#) in Switzerland, takes part in this blockchain specialized podcast [Insureblocks](#) to discuss the application of blockchain technology to achieve the UN Sustainable Development Goals. Although she recognizes that blockchain is not a panacea that can be applied to every SDG challenge, she does stress that it is a technology worth considering and incorporating into the field for the potential impact it has contributing to the well-being of communities worldwide. Marianna also shows the growing interest in the field to implement this technology by bringing forward the [Blockchain 4-Impact](#) conference held in 2019 in Geneva to discuss the opportunities and challenges blockchain technology brings to the context of SDGs. During this event, three main areas were identified where blockchain could be applied to benefit others and help achieve specific SDGs. These areas were financial exclusion, ecological/socially responsible production and distribution of commodities, and documentation of property rights. Additionally, as Marianne states, blockchain can help NGOs fundraise and have an accountability system with their donors to ensure complete transparency in the most efficient way. In other words, the application of this technology to the SDGs could contribute not only in working towards these goals but also in the coordination efforts set in place by member States and international organizations aiming at fulfilling the 2030 agenda.

Building Blocks [Project - WFP]

A Nobel Prize winner and the world's largest humanitarian organization, World Food Programme is reaping the benefits of blockchain technology to fight hunger in crisis and post-crisis settings. The organization is providing the largest blockchain-based cash transfer assistance through 'Building Blocks', an innovative project that helps the WFP to deliver food and cash assistance more effectively. The pilot was first rolled out [in 2017 at Sindh province, Pakistan](#) targeting only 100 beneficiaries. After a successful first phase, WFP implemented it in two refugee camps in Jordan, in 2017. Under the scope of this project, beneficiaries are entitled to a given amount of cash which is stored in a virtual wallet maintained on the blockchain. They also have his/her own unique biometric identification that enables

them to purchase food at local grocery stores and pay with an iris scan at the checkout. Transactions are done electronically using [digital vouchers](#), where these are transferred from the beneficiary's wallet to the merchant's wallet. Through this process, blockchain technology allowed unbankable refugees to benefit from cash loans, [savings on financial transaction fees by 90%](#), fostering trust, and spurring sustainable development activities within the community. This technology also ensures security, data privacy and greater transparency. By September 2018, more than [100,000 refugees](#) living in the Zaatari and Azraq camps effectively received cash transfer through blockchain. These benefits prompted WFP to set a [goal of scaling up](#) to reach all 500,000 of its Syrian refugees in Jordan. In 2020, the organization scaled '[Building Blocks](#)' in Bangladesh.

More WFP projects can be found here: [3 ways blockchain innovation is enhancing humanitarian response](#) | by WFP Innovation Accelerator | Apr, 2021 | Medium

Blockchain for Social Impact [Project - Accenture]

The benefits of blockchain have not only been enhanced by international organizations to promote Sustainable Development Goals, but by private companies that wish to have a social impact. [Accenture](#) is a multinational consulting company currently using blockchain technology to connect producers and consumers in the supply chain. In fact, Accenture is leveraging blockchain to help businesses grow while benefiting communities all over the world. As [Paul Daugherty](#), Chief Technology and Innovation Officer at Accenture explained: "leading companies have seen this increasingly strong connection between trust and growth, and are looking to advance their businesses in ways that not only meet their business goals, but also benefits people, communities and citizens". This is how Accenture has devoted its expertise to advise small and medium businesses on how to implement [blockchain solutions](#) to connect and expand their business models while having a social impact. In addition, by partnering with Akshaya Patra, Accenture advised the creation of a [Mid-Day Meal Program](#) for children in Indian public schools that uses blockchain to drive efficiency and timeliness of lunch programs. Likewise, the company worked with DHL in creating transparency and [traceability in the pharmaceutical supply chain](#) to eliminate counterfeit drugs thus showing how blockchain can not only be used for social good, but also how companies can gain from it while having a positive impact on the world.

What We've Learned So Far About Blockchain for Business [Article - MIT Sloan]

For the past decade, the private sector has shown a certain degree of skepticism towards blockchain's potential to disrupt business models. Of course, as Iansiti and Lakhani argue in an [article from 2017](#), "in a digital world, the way we regulate and maintain control [over economic, legal and political systems] has to change". At the same time, there are those that have warned about blockchain's hidden vulnerabilities and the need to be cautious with its use. Interestingly, the MIT Sloan article proposes that those doubts are dissipating. According to a survey cited, more than 50% of executives "place blockchain among their top five strategic priorities". The question now is, what will happen as more businesses decide to embrace blockchain? How is this going to change the way we make daily transactions locally and globally? We'll see.

Further Afield

What is Blockchain?

- [Realizing the Potential of Blockchain](#)
- [A Policymaker's Guide to Blockchain](#)

- What Is Blockchain?
- Towards a technocratic governance system?

Benefits of Blockchain

- Using Blockchain to Improve Decision Making That Benefits the Public Good
- How blockchain technology could change our lives?
- Analysis of the Potentials of Blockchain for the Governance of Global Digital Commons
- Brokerages 4 Ways Blockchain Could Impact Our Lives

Challenges of Blockchain

- What are the risks with public blockchains?
- The risks and unintended consequences of blockchain
- Sustainability solution or climate calamity? The dangers and promise of cryptocurrency technology
- The Benefits and Risk of Blockchain Technology
- What is blockchain and how can it change our society?

Projects Using Blockchain

- Chained Together: How Blockchain is Improving Supply Chains
- Building a Transparent Supply Chain
- More than just cryptocurrencies - using blockchain for climate action in agriculture
- This start-up is using blockchain to help smallholder farmers prosper
- United Nations publishes blockchain guide, highlights current projects
- Realizing blockchain's potential for social impact | United Nations Development Programme
- Building Blocks | WFP Innovation
- How blockchain has transformed the lives of Ecuadorean cocoa farmers
- Blockchain applications in the United Nations system: towards a state of readiness
- SocialGood. The Cryptocurrency for Better Society
- Accenture. Blockchain for social impact

Blockchain for Social Good

- IBM. What is blockchain for social good?
- How the Blockchain Brings Social Benefits to Emerging Economies
- Stanford GSB. Blockchain for Social Impact: Moving Beyond The Hype.
- Blockchain for Social Good. A field in expansion.
- Blockchain for Social Good: Reviewing top use cases in 2018
- Blockchain For Good: How the United Nations Is Looking To Leverage Technology

Blockchain Use in Different Sectors

- Will blockchain transform the public sector?
- Using blockchain to improve data management in the public sector
- The Blockchain Revolution and Higher Education
- Exploring blockchain technology and its applications for education
- Blockchain and the environment
- Bitcoin and Beyond
- How blockchain technology is fixing payments and what's next
- Ethiopia's blockchain deal is a watershed moment – for the technology, and for Africa

Links We Like #30

Publication Date:
August 23, 2021



AI and ML for People with Disabilities: Innovations and Challenges

One of the biggest opportunities that Artificial Intelligence and Machine Learning technologies have opened up is the chance to design solutions that can positively impact the lives of people with disabilities. According to the [World Health Organization](#), about 15% of the global population (1.2 Billion people) has some type of disability. In the fight towards inclusivity, companies, organizations and individuals have developed AI tools capable of assisting people in performing daily tasks. These technologies are often described as [assistive technology](#), that is, any item, program or system that is used to increase, maintain or improve the functional capabilities of a person.

AI and ML technologies are currently being used to address [four main problems](#): facilitating communication with others, increasing mobility, enabling independent living, and ensuring equal access to services. Tools such as [Voiceltt](#) and [project Euphonia](#) train speech recognition models through several recordings to help people with speech impediments or an atypical speech pattern who face issues to be understood. For those dealing with mobility-related disabilities, initiatives like the one started by Brazilian start-up [HOOBX Robotics](#) and Intel, are changing the landscape by creating a technology that allows a person to use their facial expressions to control the movements of an electric wheelchair. Similarly, apps such as [Seeing AI](#) help the visually-impaired to move around by narrating textual messages as well as the objects and individuals that surround them. Other technologies like the [Amazon Echo Show "Alexa" or "Siri"](#) are also being adapted to become autonomy-enhancing tools for people with disabilities through the use of the voice control functionality which enable them to move around their house and perform different tasks.

Unfortunately, one of the hardest tasks for this sector of the population is the lack of access to basic opportunities such as education and employment. Experts at Vanderbilt, Cornell, Yale and Georgia Tech joined forces to develop different initiatives that would respond to the distinct needs that people with [Autism Spectrum Disorder \(ASD\)](#) have in the workplace. These initiatives, that range from interview simulators to practice social skills in interviews and completing virtual tasks in a team setting, aim to incorporate more people with ASD into stable employment where they can use their skills to excel professionally.

One of the most interesting aspects of this topic lies in the fact that artificial intelligence and machine learning can be applied in unique ways to the specific needs that arise from each disability. At the same time, the increasing use of AI has also brought challenges and sometimes even contributed to invisibilize the lives and experiences of people with disabilities.

In this edition of Links We Like we will explore some of the ways in which organizations and companies are leveraging the power of AI and ML to enhance the lives of people with disabilities, but also some ways

in which these technologies are limiting them. Shedding light on both sides can help us create a more inclusive and accessible society for all.

AI's Problem with Disability and Diversity [Article - CBC Radio]

Machine learning (ML) is a powerful approach to artificial intelligence (AI) designed for creating patterns based on data collection and with increasing presence in our daily lives. ML processes aim to **predict how different things will behave in the future, thus allowing to make decisions based on those predictions**. However, professor Jutta Treviranus points out that one of the constraints holding back the improvement of machine learning systems for people with disabilities is the use of proprietary software. When creating Big Data sets, the tricky process of refining the data that fuels ML engines (in order to clean out information that disrupts the greater pattern) can cause problems, since not all outlier data is irrelevant. Although the edged data makes it more difficult for ML systems to come to a quick and relevant decision, such data can represent the experience of real people. "Research is not very supportive to diversity (...) and we have basically transferred that to machine learning", Jutta says. To address this issue, Jutta suggests the use of open transparent systems and create technologies that work for people with disabilities and are thus more inclusive.

Using AI for Disability Inclusion [Article - Disability:IN]

The implementation of AI in organizational processes -such as human resource management- has increased considerably in recent years, but the unwanted (or undesired) negative effects on people with disabilities is still relatively unaddressed. As Laurie Henneborn states in this brief article, close to "76% of organizations with 100 or more employees use algorithms to assess performance on hiring tests, and 40% use [AI] when screening potential candidates". However, unawareness of how algorithms, AI, or even screening processes do not include critical considerations of disabilities is common in decision-making processes. To tackle these issues and close the ableist bias gap in organizations, Accenture Research in collaboration with Disability:IN and the American Association for People with Disabilities (AAPD), have proposed four guiding principles for inclusive design. What they call R(AI)S stands for Responsible (adopting and scaling AI responsibly and ethically); Accessible (ensuring all AI ventures prioritize accessibility); Inclusive (act with fairness in mind, consider lived experiences of people with disabilities and use de-biasing techniques), and Secure (ensure privacy is not put at risk). These principles have been put forward by this partnership to assess the consequences of AI on every aspect of the employment experience, to re-think organizational processes, and to "R(AI)S the AI game".

Shrinking the 'Data Desert': Inside Efforts to Make AI Systems More Inclusive of People with Disabilities [Blog - Microsoft, The AI blog]

In recent history, not enough data has been collected to train personalized object recognition within the machine learning field for people with disabilities. Last year, Microsoft AI for Accessibility granted City, University of London, support for the launch of the Object Recognition for Blind Image Training (ORBIT), a research project to build a public dataset using video submissions from individuals who are blind or have low vision. Lack of large datasets has been an ongoing challenge for researchers and developers seeking to enhance the daily lives of people with disabilities. In the first phase of ORBIT, the team collected several videos, vetted to ensure there was no information that could be used to personally identify individuals or cases. This is now the largest dataset of its kind. The overall objective is to make the ORBIT dataset publicly available so it can be leveraged by other



organizations and researchers. On another note, this article also touches upon a workshop hosted by Microsoft at [NYU's AI Now Institute](#) in 2019 to address how to further develop AI systems that do not further marginalize those with disabilities. Undoubtedly, expanding public data sets beyond what is currently utilized to train AI systems will be a continuous effort towards inclusivity.

Flawed Data is Putting People with Disabilities At Risk [Article - TechCrunch]

Accessibility concerns rise as AI advances and data tools become more sophisticated. In fact, [Cat Noone](#), CEO of [Stark](#) –a startup that thrives to maximize accessibility to software–, affirmed that it is not only the AI or ML systems in and of themselves that are not accessible, but **flawed data is putting people with disabilities at risk**. In a publication for [TechCrunch](#), Noone explains that AI is structured to find patterns and form groups. Boxes to which, (is something missing in this sentence?)many times, people with disabilities cannot fit in. AI systems classify everything and everyone;how do they classify a person in a wheelchair, or in a vehicle category? As head of Stark, Cat Noone promotes five pillars that need to be followed to guarantee that an innovation is mindful of people with disabilities. In her company, engineers, designers, product managers and all employees have to address: 1) what data they are collecting, 2) why are they collecting it, 3) how will the innovation be used (and misused), 4) simulate IFTTT (“if this, then that”) to picture possible scenarios in which data can be used, and 5) ship or trash the idea. Overall, innovation requires ethical stress tests that guarantee accessibility and take everyone in mind. As Noone explained: “we all have to acknowledge the data in front of us and think about why we collect it and how we collect it. That means dissecting the data we’re requesting and analyzing what our motivations are”.

Machine Learning & Autism [Brief Literature Review - Medium]

Accessibility, disability and artificial intelligence have become intertwined. Research in machine learning and AI is increasingly interested in either assisting to medically heal disabilities or accommodating them better. As [Musser](#) concludes, It is particularly exciting to see this trend in research focused towards individuals on the autism spectrum. For diagnosis , [Liu, Li and Yi \(2014\)](#) came up with a machine learning model that helps identify ASD (Autism Spectrum Disorder) cases, through eye movement using data already collected from ASD cases in previous studies. The model is able to successfully predict the existence of ASD in an individual at a 88.51% level of accuracy.

Another group of researchers from [Duke university](#) were able to create a non-invasive tool to diagnose autism. The CV (Computer Vision) tool designed helped automatise the clinical process to spot autism, and received an interrater score of 75%. Another successful ML model ([DP.Wall et .al, 2012](#)) with an incredible 100% accuracy is helping reduce the work it takes from clinicians to evaluate ASD by 66%, which effectively brings evaluation items from 29 to 9 with zero loss of accuracy. For therapy, the [MIT Media Lab](#) arranged for a robot inside a clinic. This robot assists in providing kids with therapy through a specialized model that caters to the needs of each kid it interacts with. The deployed robot is now able to properly mimic a therapist through suggestions and prompts such as “why are you sad?”.

Further Afield

AI, Disabilities and Accessibility

- [How Microsoft is using AI to improve accessibility](#)
- [How Microsoft's AI For Accessibility Is Addressing The Issue Of Data Desert](#)

- Design, Disability, Creativity, and Accessibility with Cynthia Bennett
- Using AI for Disability Inclusion
- AI for Accessibility with Wendy Chisholm
- Accessibility and Computer Vision
- Artificial Intelligence and Accessibility: Examples of a Technology that Serves People with Disabilities
- AI for Accessibility Projects - Microsoft AI
- AI and Accessibility

AI for Inclusivity of the Population with Disabilities

- Podcast: Protecting People with Disabilities Against Discrimination with AI in Employment:
- How Microsoft Is Enabling Its AI-Based Technology To Be Disability-Inclusive
- AI and Inclusion
- AI Data-Driven Personalisation and Disability Inclusion
- Powering Inclusion: AI and AT - the findings of an online expert roundtable
- Empowering Technologies: AI and Inclusion
- AI for disability inclusion - Accenture

AI Projects to Help the Community with Disabilities

- Shrinking the 'data desert': Inside efforts to make AI systems more inclusive of people with disabilities
- Using a Smartwatch to Detect Stereotyped Movements in Children With Developmental Disabilities
- How People with Disabilities are Using AI to Improve Their Lives
- Top 10 AI-Powered Mobile Applications for People with Disabilities
- Machine Learning Opens Up New Ways to Help People with Disabilities - MIT
- How People with Disabilities Are Using AI to Improve Their Lives
- Outdoor Navigation for Visually Impaired based on Deep Learning
- Assistive technology for persons with disabilities

Designing Fair AI

- Designing AI Applications to Treat People with Disabilities Fairly
- Designing AI Applications to Treat People with Disabilities Fairly - IBM
- Implications of developments in machine learning for people with cognitive disabilities
- AI Fairness for People With Disabilities
- Artificial Intelligence and Special Needs: Artificial Intelligence could be a game changer for Special Needs
- The promise of empathy: design, disability, and knowing the "other"

AI and Disability

- Mixtape podcast: Artificial intelligence and disability
- How AI is helping people with disabilities
- Can you make an AI that isn't ableist?
- Living With It: AI and Disability
- Flawed data is putting people with disabilities at risk
- Artificial intelligence and disability: too much promise, yet too little substance?

Links We Like #31

Publication Date:
September 29, 2021



Online Harassment and AI Content Moderation: Countering Threats to Freedom of Expression

The emergence and popularity of new social networks has opened space for a multitude of virtual interactions between people from diverse backgrounds. Consequently, the internet allows anyone to become a “communicator”, with access to a wide audience to share their views. With the virtual environment becoming one of the most important centers of public debate, innovative policies and measures that reduce online attacks and potential harm against vulnerable groups, while also guaranteeing the participation of minorities in the digital landscape, are needed. While human moderation has served as the traditional modality towards that end, the sheer vastness of content generated daily online has created the need for AI to act as an additional tool in the fight against harmful content.

Feminist studies understand online harassment (also referred to as online bullying) to be an expression of broader cultural patterns that relegate women to an inferior position in society. Additionally, [recent literature](#) discussing online harassment and hate speech draws a sharp distinction between harassment directed at a person for being part of a specific group and from offense directed at a person for their views, with the consequences on the first group being more profound. Subsequently, groups that already suffer from discursive violence and inequalities are potentially more vulnerable to becoming the targets of online harassment.

[According to the literature](#), women are more likely than men to stop publishing content or engaging in social media after experiencing online attacks. These studies also show how online bullying directed at women is unique in that it generally expresses as hyperbolic offenses and sexualized mockery. In many cases, the attacker further characterizes the victim as unintelligent, hysterical and ugly, and makes threats and/or relays fantasies about violent sexual acts generally thought of as ways to “correct” the women or girls’ behavior.

For women, the experiences of other women –and, consequently, their knowledge of the risks of being subject to similar situations– can generate fear, even if they themselves have not previously gone through the same harassment. One of the most critical findings of the [Data & Society survey](#) is that online bullying, in addition to causing fear and other emotional symptoms, makes vulnerable groups more careful – if not reluctant– to express their views on the internet: four out of ten women say they have self-censored to prevent online harassment. Black and LGBTQIA individuals also tend to be more self-censoring than Whites and heterosexual people. For this reason, harassment can be a threat to the very ideals of equality and equitable democratic participation.

This edition of Links We Like explores the ways in which AI can be utilized to identify, measure and curtail online harassment, in order to create a safer and more equitable online experience for users of all backgrounds, thus helping to democratize freedom of expression in the digital landscape.

Measuring the Prevalence of Online Violence Against Women [Research Article - The Economist Intelligence Unit]

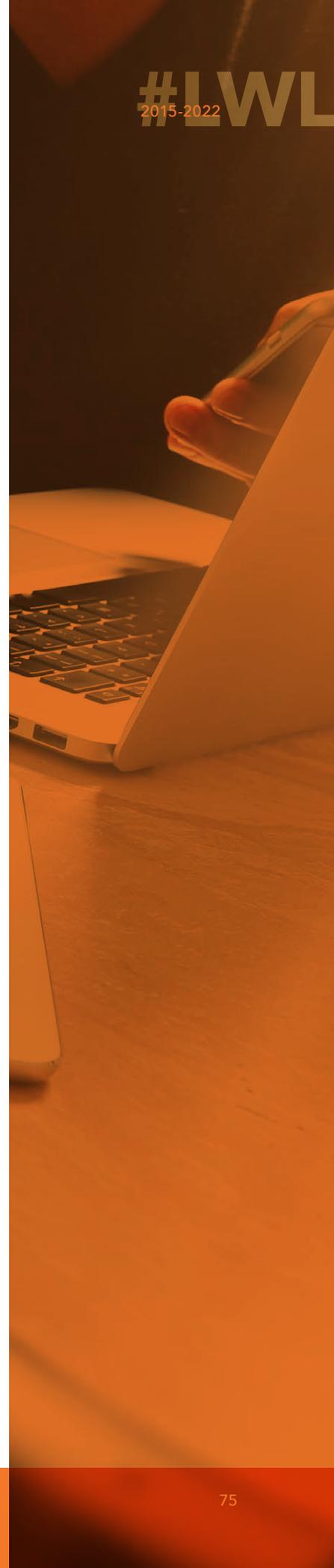
This article opens with the following quote: “The internet presents a double-edged sword for women”, which immediately illustrates the unfortunate realities women face online. This “double-edged sword” metaphor emerges from the fact that the internet presents new dangers to women, while also giving them access to new spaces and communities to seek support and opportunities. Leveraging the power of data-driven storytelling, this EIU study includes the top 51 countries by number of online users, and addresses issues such as regional differences in online violence prevalence (of which the Middle East leads), lack of government support, frequency of underreporting, and overall impacts and actions taken by those experiencing abuse online. One of the most interesting findings is the list of nine threat tactics that predominate the digital landscape: misinformation and defamation (67%), cyber-harassment (66%), hate speech (65%), impersonation (63%), hacking and stalking (63%), astroturfing (58%), violent threats (52%), doxing (55%), and video-and image-based abuse (57%). To learn more about each tactic, click on the link above.

Human Rights and AI-Powered Content Moderation and Curation in Social Media [Blog - Raoul Wallenberg Institute]

In this blog post, Senior Policy Advisor [Sebnem Kenis](#) sheds light on the problematic issues of AI-based content moderation and techno-solutionism. While it is easy for legislators, governments and even companies to put their faith in innovations and “content-policing” conducted by tech companies, Kenis argues that most of the online harms –such as hate speech, cyber harassment and even violent extremism– are deeply rooted in homo/transphobia, patriarchy, racism, ultranationalism and poverty. In fact, AI-powered solutions have proven ineffective in preventing online harm and related human rights violations. The author further explains that when algorithms fail to detect certain harmful or violent content, they can actually contribute to their spread. For example, in 2018 the UN accused Facebook of [mobilizing genocide in Myanmar](#). Likewise, freedom of expression and access to information are infringed when legitimate political expressions are removed by automatic filters. Kenis brings up cases of [leftist](#) and [LGBTIQ+ content](#), as well as examples from [Colombia](#), [India](#) and [Palestine](#) to emphasize the point. While AI-powered solutions are useful tools for content moderation, it is unwise to pin our hopes on them alone to address deeper and more complex societal issues.

Platforms Should Use Algorithms to Help Users Help Themselves [Article - Carnegie Endowment for International Peace]

This article makes the case for the usage of AI, both before content is shared and after it has been published, to prevent inappropriate, hateful or false information from going viral. Although the article recognizes the great challenge this implies, it also offers options to improve human post hoc moderation. An option is to focus on pre-published content by suggesting the implementation of systems that elicit self-moderation from social media and online platform users before they post questionable content. This option could also be paired with AI technology. For example, AI could be used to examine platforms’ archives of previously removed content, and trained (i.e. using a machine learning algorithm) to assess





the likelihood that new content may violate community standards. Therefore, if a post has more than 75 percent likelihood of violating platform policies, the user would be asked to re-evaluate their decision to post. If the content is still published, it would be flagged for inspection by a human moderator. By outlining these moderation alternatives, the authors seek to move the conversation forward and improve the existent post hoc moderation process by making it much more effective and participative.

Perspective API [Project - Perspective]

The “Perspective API” project emerged from a collaborative research effort between Google’s Counter Abuse Technology team and the [Jigsaw](#) Initiative. Perspective is a free API trained with machine learning models to identify “toxic” comments in online conversations. The model uses a scoring system to determine the perceived impact a text can have in such conversations. The scores are determined by different attributes; including toxicity, profanity, threats, explicit sexuality, identity attacks, insults and severe toxicity. The project’s goal is to help human moderators to review comments faster and more efficiently, while also helping readers filter out language that is harmful or toxic. The tool can be integrated into different platforms and spaces, such as comment sections or forums, and is currently being used by Reddit, The Wall Street Journal, The New York Times, Le Monde and other important publications across the world.

Online Content Moderation: To AI or Not [Blog - Analytics India Magazine]

YouTube Chief Product Officer, Neal Mohan, made a statement last year saying that the lack of human oversight over content removal led to machine-based moderators taking down 11 million videos which did not violate any community guidelines. This article examines AI’s role in content moderation, delving into its benefits and limitations, but first it explains how AI uses content-based moderation (in the form of natural language processing) to analyze text and images and determine whether they contain hate speech, harassment, and/or fake news. Though these methods are not foolproof, as demonstrated by YouTube’s example, the article argues that they are much more efficient and effective than relying solely on human content moderators; both in terms of the amount of content that can be reviewed and the resultant mental health trauma faced by moderators, including post-traumatic stress disorder. However, the author does note that because technology has not advanced to the point where it can perfectly assess whether a piece of content is harmful or not, the best alternative remains for a hybrid human-AI moderation system.

Further Afield

Online Harassment

- [Online Harassment Isn’t Growing—But It’s Getting More Severe](#)
- [Online Harassment 2017](#)
- [Defining ‘Online Abuse’: A Glossary of Terms](#)
- [Techdirt Podcast Episode 268: A New Approach To Fighting Online Harassment](#)
- [Harvard Business Review. You’re Not Powerless in the Face of Online Harassment](#)
- [Online Harassment and Content Moderation: The Case of Blocklists](#)

Content Moderation Strategies and Algorithms

- The impact of algorithms for online content filtering or moderation
- Algorithmic misogyny in content moderation practice
- Platforms Should Use Algorithms to Help Users Help Themselves
- Online Harassment and Content Moderation: The Case of Blocklists
- OHCHR. Moderating online content: fighting harm or silencing dissent?
- Freedom of Expression and Its Slow Demise: The Case of Online Hate Speech (and Its Moderation/Regulation)
- Shadows to light: How content moderation protects users from cyberbullying

Social Media Content Moderation

- Double Standards in Social Media Content Moderation
- Moderating Hate Speech and Harassment Online: Are Internet Platforms Responsible for Managing Harmful Content?
- Social Media Platforms Claim Moderation Will Reduce Harassment, Desinformation and Conspiracies. It Won't.
- Tools and strategies for online moderators to address abuse on social media
- Hate Speech on Social Media: Content Moderation in Context

AI and Content Moderation

- AI and Content Moderation - The Ethics of Digitalisation
- The Role of AI in Content Moderation
- Leveraging AI and Machine Learning for Content Moderation
- How AI Is Learning to Identify Toxic Online Content
- This New Way to Train AI Could Curb Online Harassment
- Predicting Cyberbullying on Social Media in the Big Data Era Using Machine Learning Algorithms: Review of Literature and Open Challenges
- Can data analytics and machine learning prevent cyberbullying?

Links We Like #32

Publication Date:
October 27, 2021



Facebook: The Promise and the Peril

When speaking about the purpose of his company, Facebook founder Mark Zuckerberg has been quoted as saying, “By giving people the power to share, we’re making the world more transparent.” This leads to a very important question, is Facebook itself living up to this standard? According to a [recent whistleblower](#), the answer is no. Considering Facebook’s global prominence, with over [2.89 billion](#) active monthly users worldwide, and ever more common scandals and public demands for transparency, questions regarding its potential to either help or harm the world have grown more important than ever.

According to Facebook’s [mission statement](#), it aims to “give people the power to build community and bring the world closer together.” In many ways, the case can be made that it is accomplishing this goal. In economic terms, the numbers are staggering. The company is “worth” approximately [US\\$280 billion](#), with an even higher market capitalization. Additionally, there are over [90 million](#) small businesses active on Facebook, giving them access to a huge base of potential customers. Facebook is also a leading [contributor](#) to open-source projects and can be very helpful in the event of an [emergency](#). It is also important to consider the “connections” it helps to facilitate. With so many users (and even more when counting Facebook-[owned](#) platforms Instagram and WhatsApp), it is possible for individuals to stay in touch with friends and family all over the world. There is even a good chance that you found this article from a link on social media.

So what’s the problem? Unfortunately, many have arisen during Facebook’s stratospheric rise. The company has been accused of enabling the spread of misinformation that increases political [polarization](#), as well as serious concerns regarding the handling of user’s private [information](#) (the reason you’ve probably heard of “Cambridge Analytica”). Perhaps the most serious allegations are those related to Facebook’s role in allowing the propagation of hate speech, which contributed to the Rohingya [genocide](#) in Myanmar. Many of these problems have been blamed on the company’s [algorithm](#), which is said to prioritize engagement, regardless of the negative impacts caused to users and society as a whole.

More recently, two major events have compounded the troubles facing the company. The first was a major [outage](#), which lasted for over five hours, disrupting communication for billions of users around the world and costing millions of dollars in [losses](#). The second is the emergence of whistleblower [Frances Haugen](#), a former employee in the company’s Civic Integrity division. In her testimony before the United States Senate, Haugen accused her former employer of creating a “system that amplifies division, extremism, and polarization”. She went on to accuse the company of ignoring the harm its products cause to self-esteem and mental health, especially for young girls. She says this happened without the knowledge of the outside world, calling into question the “transparency” Mark Zuckerberg has described as Facebook’s “reason for being”.

In this edition of Links We Like, we examine the recent controversies surrounding Facebook (and other platforms), to gain a better

understanding of the impact social media is having on us, both on a personal and global level.

The Facebook Files, Part 6: The Whistleblower [Podcast - The Journal]

As part of the “Facebook Files” series in [The Journal](#), a podcast created by the Wall Street Journal and [Gimlet](#), [Kate Linebaugh](#) interviewed Facebook whistleblower Frances Haugen. During the interview, Frances discussed her experience working on Facebook’s Civic Integrity team and the breaking point when she decided she must go public with the information she had learned regarding Facebook’s management of hate speech, misinformation, and harmful content. Frances recalls how Facebook created the Civic Integrity team to avoid a repeat of the events of 2016 in the 2020 election. When analyzing the situation with her team, Frances was shocked to see the numerous threats the company faced, which couldn’t be solved before the election. Additionally, she participated in Virality Review meetings where the Social Cohesion team reviewed the top viral posts in at-risk countries and found the horrific images that went viral in places with threats of genocide. Following this encounter, she learned the Civic Integrity team was being shut down. This was the final breaking point, as she had lost trust in Facebook, after seeing that they had so much information about the impact of the platform and still went on to dismantle the team. At this point she decided to speak out. Now Frances’ goal is for the public to have enough information to make choices on what laws should be enacted to regulate Facebook and to advocate for algorithm governance.

Teens Social Media Habits and Experiences [Research Project - Pew Research Center]

Social media is really the “embodiment” of paradox: it is where prominent athletes (e.g. Naomi Osaka, Simon Biles, and Michael Phelps) have [advocated for social media](#) as a place to open conversations about their lives and the difficulties they face on a daily basis (usually in silence). However, it is also the space where detractors have called them –yes, olympic athletes– “snowflakes”, and where [17% of teenage girls](#) with eating disorders claim to have experienced worsening symptoms after Instagram use, according to the study leaked by Facebook’s whistleblower. While the project featured here, from the Pew Research Center, is from 2018, the findings continue to illustrate this paradox, and provide an in-depth view of teenagers’ experiences in the digital world, using enlightening data and charts (such as the one shared below). Check out the link to explore all the findings this project revealed.

Why the Facebook Whistleblower Doesn’t Want the Company Broken Up [Article - Quartz]

As Facebook continues facing various investigations and accusations from the whistleblower, Frances Haugen, tech reporters such as [Scott Nover](#) have been analyzing why the whistleblower insists [she does not want to harm the company, but rather to fix it](#). In a blogpost published at [Quartz](#), Nover explains that Facebook has been facing an “avalanche of issues”, including [data privacy concerns, misinformation, hate speech, enabling autocrats, destabilizing developing nations](#), making people [angrier](#), and creating an overall [insecure](#) environment. These issues have led to significant financial losses, but it got much worse on October 5 when the whistleblower testified before the US Senate. Her testimony came directly after Facebook had one of the largest outages in its history, which led to millions of dollars in [losses](#). In this context, Nover argues that the whistleblower’s rationale is not for the company to



break up, thus having Facebook, Instagram, and WhatsApp operate as individual entities. The author explains that doing this would not necessarily solve the company's problems, as was highlighted by [Chinmayi Arun](#) from Harvard and Yale Law Schools. The whistleblower's rationale is that the algorithm must be fixed. She stated that Facebook currently prioritizes engagement and this is reflected in the way its algorithms work. What the whistleblower really wants is for the government to intervene and either force Facebook to audit its algorithms or create a new regulatory agency that will do so.

Facebook, Alarmed by Teen Usage Drop, Left Investors in the Dark [Article - Bloomberg]

Facebook has experienced rapid growth in recent years, but reports have shown a decrease in usage amongst teenagers. According to [Bloomberg](#), a study conducted by a group of Facebook researchers revealed a troubling trend that seems to be accelerating: Facebook is losing popularity with teens and young adults. The evidence shows that time-spent by teenagers on Facebook decreased by **16%** each year. The impact, according to [Kurt Wagner and David McLaughlin](#)'s analysis of the whistle-blower's message, is that this trend is making young users largely **invisible** to the outside world. Subsequently, the platform is potentially **disconnecting young people from families and friends**, blocking the **creation and sustainability of social networks**, promoting uncompetitiveness,, and interestingly, acting as a weapon against the sharing of ideas and best practices. Based on these insights, a strong case can be made for Facebook whistleblower's [Frances Haugen](#) accusations that the **company is prioritizing profit over safety and security**, which possibly underpins its low usage among teens. Keeping this in mind, it can be inferred that the profit margins for businesses selling teen's products will be **significantly reduced** if the trend continues. While research efforts have been strengthened, the whistle-blower believes that promoting safety and security over profits will be vital to break this barrier. Until then, the number of young adults on Facebook will continue to fall by **4%** in the next two years.

New whistleblower Claims Facebook Allowed Hate, Illegal Activity to Go Unchecked [Article - The Washington Post]

Going back to [Myanmar's coup](#), Facebook has proved that it can be used to spread hate speech and misinformation. Being the largest platform in the world with 3.1 billion users, it has been the center of attention for more than one whistleblower event. A new whistleblower and a former Facebook member of Facebook's Integrity team, had submitted an affidavit that "the company prizes growth and profits over combating hate speech, misinformation and other threats to the public." The allegation's support several previous claims made by Frances Haugen and another former Facebook employee. The new whistleblower criticized Facebook for not being aggressive enough in addressing hatred, and "its failure to adequately police its online groups." The submitted affidavit discusses several problematic contents as well as other previous filings from 2017 that address criminal and dangerous behavior on its platforms, on Whatsapp, Messenger and Instagram.

Further Afield

Facebook: The Ugly Truth

- [Dethroning Facebook's benevolent dictator](#)
- [Book Review: The Ugly Truth about Facebook](#)

- Facebook Uses Deceptive Math to Hide Its Hate Speech Problem
- How Facebook Hobbled Mark Zuckerberg's Bid to Get America Vaccinated.
- Facebook Will Not Fix Itself
- TED Talk- How a handful of tech companies control the minds of billions
- What Happened When Facebook Became Boomerbook

The Whistleblower

- The Facebook Whistleblower, Frances Haugen, Says She Wants to Fix the Company, Not Harm It.
- Whistle-Blower Says Facebook 'Chooses Profits Over Safety'. NYT.
- The Facebook whistleblower says its algorithms are dangerous. Here's why.
- Why the Facebook whistleblower doesn't want the company broken up
- As a whistleblower prepares to speak out, what can be done to rein in Facebook?
- The whistleblower's guide to fixing facebook
- Five things we've learned from the Facebook whistleblower
- The Facebook Whistleblower Won't Change Anything
- Facebook blacks out as whistleblower sees light
- Pierre Omidyar's financing of the Facebook "Whistleblower" campaign reveals a great deal
- New whistleblower claims Facebook allowed hate, illegal activity to go unchecked

Facebook and Mental Health

- Facebook's Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show.
- Facebook's Documents About Instagram and Teens, Published.
- Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show.
- Facebook's own data is not as conclusive as you think about teens and mental health
- Facebook says it will add new safety features, notably for teens on Instagram, after bombshell whistleblower leak

Facebook's Response

- Facebook Employees Flag Drug Cartels and Human Traffickers. The Company's Response Is Weak, Documents Show.
- Facebook Says AI Will Clean Up the Platform. Its Own Engineers Have Doubts.
- WSJ. Facebook Tried to Make Its Platform a Healthier Place. It Got Angrier Instead.
- Facebook says its rules apply to all. Company documents reveal a secret elite that's exempt.
- Facebook promises privacy reform. Critics aren't convinced.
- Facebook Says sorry for mass outage and reveals why it happened
- Facebook plans new group name to revamp image, says The Verge

Links We Like #33

Publication Date:
November 30, 2021

Agriculture and AI: From the Roots of Civilization to its Promising Future

"Agriculture is civilization"- E. Emmons

In our modern world, the quote above may seem simplistic, but perhaps it is still true. The root of human civilization (and survival) lies in our ability to produce food. The "civilizing" effect of agriculture is an established historical fact. The area known as the **Fertile Crescent** is where irrigation and agriculture began around 12,000 years ago. The resulting influx of travelers led to an exchange of ideas (writing, mathematics, religion), and other hallmarks of modern **civilization**; including densely-populated cities, centralized governments, and specialized occupations. Unfortunately, these advancements were also accompanied by social stratification, with hierarchies developing alongside private wealth accumulation. We now find ourselves on the verge of the next "agricultural revolution", with Artificial Intelligence (AI) and agriculture coming together. In this edition of Links We Like, we explore the effects that this linkage will create.

A History of Innovation

Due to the outside impacts of agriculture, each major "shift" has been accompanied by rippling effects on individuals and societies. Following the aforementioned "First Agricultural Revolution" (Fertile Crescent) and the rise of civilization, the **Second Agricultural Revolution** occurred in Great Britain in the 18th century. With the increase in productivity (due mostly to new machinery and crop rotation), food supplies also increased, allowing for the formation of more densely populated cities and demand for consumer goods that would contribute to the Industrial Revolution. The third "**Green Revolution**" of the 1960s, driven mainly by new chemicals, pesticides, and seed varieties, resulted in massive gains in productivity and production. In turn, the world witnessed steep declines in food insecurity (and the sharp increase of the human population we have witnessed since that time.)

The Fourth Agricultural Revolution

We now stand on the precipice of what many refer to as the **Fourth Agricultural Revolution**, resulting from the use of AI (and related technologies.) Many exciting new possibilities seem to exist, including autonomous robots that can undertake the growing and picking of crops, as well as the care of livestock. These technologies have potential to help meet serious challenges related to food security and environmental degradation caused by current agricultural practices, including reducing **CO2 emissions**. They could also **free workers** from the types of manual labor currently associated with agriculture and help to attract a new generation of farmers. Thus far, much of the political **conversation** around this "revolution" has been optimistic and AI agribusiness has attracted major **funding**. So, what could possibly go wrong on the inevitable march towards this bright, technologically enhanced future?



Shared Success?

The story of agriculture, like so many others in the modern world, is one of two “worlds”, rich and poor. In developed economies, the **percentage** of people working in agriculture is around 1 in 100. Those rates rise to over 70% in many developing economies. Additionally, those in the Global South are much **more likely** to suffer from food insecurity and are more vulnerable to commodity price shocks. These factors combine to make technological improvements into a highly pertinent issue in the developing world, and concerns regarding equitable **access** to new technologies, such as AI, have already arisen. As this revolution continues, inclusion of countries and populations with limited access to infrastructure, capital, and capacity to implement AI systems will only grow in importance, to ensure that no one is “left behind”.

Signs of Hope

Fortunately, initiatives are already underway to bring these new innovations to smallholder farmers in many countries. One example is **SunCulture**, which is already improving crop yields and annual income for Kenyan farmers, as well as reducing manual labor hours. By utilizing TV white spaces (TVWS) to expand high-speed **internet access**, they are also helping to make precision farming possible in underserved areas. Additionally, the **AGRA** alliance is working together with farmers, local governments, development agencies, and businesses to bring locally appropriate technologies to farmers across the African continent. These are just a few examples of many diverse groups and stakeholders already working to ensure that the benefits of new technologies are equally shared.

Join us examining other ways in which AI is already impacting agriculture, and what we might expect in the future. Resources are available in English, Spanish and Arabic.

How Blockchain Helps Smallholder Farmers in Developing Countries [Podcast - Future of Agriculture]

In 38 minutes, this podcast outlines the promising impacts that advanced technologies can have on agriculture. Interviewee David Davies, founder and CEO of AgUnity, discusses the mobile app he developed to help farmers in developing countries: **AgriLedger**. This app serves farmers by doing exactly what blockchain was designed to do: create a permanent, tamper-proof ledger to build trust between different actors in the production chain. The app allows farmers to conduct a variety of transactions (e.g. hiring custom seeders and harvesters, cooperate and negotiate with other farmers, get their crop to market and track them throughout the production process, etc.). By strengthening collaboration and creating more value at the farm level, AgriLedger has been able to triple farm income in the two completed pilot projects; in Kenya for wheat farmers, and in New Guinea for cocoa bean growers. In addition, AgriLedger automates record keeping and reduces waste, making this a sustainable agriculture project.

Inteligencia artificial para “ver” raíces de cultivos [Project, in Spanish - SciDevNet]

Con el fin de garantizar la subsistencia de millones de personas, es fundamental potenciar la seguridad alimentaria y la calidad agrícola. Uno de los productos más consumidos en América Latina es la yuca, cuyo cultivo se extiende en diferentes países de la región y del mundo, y garantiza la subsistencia de más de **800 millones de personas**. Data la importancia de garantizar que estos cultivos no padezcan de plagas, enfermedades u otros problemas que puedan dañar la yuca, científicos del **Centro Internacional de Agricultura Tropical (CIAT)** de Cali, Colombia, han

desarrollado un modelo de aprendizaje automático para estudiar las raíces de los cultivos. Los científicos utilizan drones, aprendizaje computarizado y sensores de penetración para estudiar el desarrollo del suelo de los cultivos de yuca, y cómo estas condiciones influyen en el crecimiento de las plantas.

Los científicos han logrado fusionar datos de las imágenes captadas por los drones, analizarlas con el **software** de aprendizaje automático y entender cómo estos tubérculos responden a los estímulos en el campo en tiempo real. Según Diego Sánchez, investigador del grupo Agroclimatología y Ecofisiología de Cultivos Tropicales de Agrosavia, Colombia, "el método y la plataforma presentada por los investigadores puede ayudar y facilitar el trabajo de los cultivadores de yuca en el mundo".

How AI can be Used in Agriculture: Applications and Benefits [Article - TechTarget]

Kathleen Walch deeply explores the benefits of AI implementation in the agricultural sector. First, the author examines how, by utilizing Big Data analysis, farmers can evaluate weather conditions, temperature, and water usage to make more appropriate business decisions. In addition, this data analysis also contributes information on soil, light, food and water requirements, and facilitates the reduction of greenhouse gas emissions. Moreover, AI systems are used to detect plagues and pests in plants, to create probability models to predict seasonal forecasting and, consequently, to reduce the risk of crop failure. Similarly, algorithms serve as tools to calculate economic trends, prices, and supply management.

Artificial Intelligence Best-practices in Agriculture can help Bridge the Digital Divide While Tackling Food Insecurity [Event - FAO]

During last year's online event "AI, Food for All", FAO, IBM and Microsoft, discussed concrete ways through which AI can contribute to food security, while safeguarding natural resources and addressing challenges such as climate change and the impacts of shocks, including the COVID-19 pandemic. So far, AI in farming is emerging in three major areas: agricultural robotics, soil and crop monitoring, and predictive analytics. Two best practices models were presented: FAO's **WaPOR** portal, which monitors and reports on agriculture water productivity throughout Africa and the Near East, and The **Agricultural Stress Index System (ASIS)**, a quick-look indicator developed by FAO for the early monitoring of agricultural areas with a high likelihood of water stress/drought at global, regional and country levels, using satellite technology.

[Article, in Arabic - Alarab] الزراعة الذكية باتت حقيقة.. فماذا أعددنا لها

في هذه المقالة، يتناول الكاتب علي قاسم أهمية الثورة الزراعية التي من خلالها أتاحت التكنولوجيا فرصاً جديدة للمزارعين والفلاحين، و السؤال الأهم الذي يطرح نفسه هو عن استعداد الدول العربية للاستفادة من هذه الثورة دون الانجرار إلى التحديات والتغيرات التي قد تحمل آثاراً وعواقب اقتصادية واجتماعية وسياسية جذرية وعميقة. وبالتفصيل، يتناول الكاتب تكنولوجيا الذكاء الاصطناعي التي باتت تستخدم فيها المزارعون طائرات دون طيار وجرارات وآلات حصاد وقطف ثمار مبرمجة للعمل وحدها، من البذار إلى مراقبة المحاصيل ووصولاً إلى جنيها، ذلك عبر استخدام نظام ال جي. بي.أس. والهاتف الذكي أو شاشة الكمبيوتر.

وينتقل من أسرار الروبوتات إلى الحلول الفعالة والطرق المسدودة في هذا المجال، والمعوقات الثلاث الأساسية: نقص المياه، تقلص الأراضي الصالحة للزراعة، و الهجرة من الريف نحو المدينة.

قد تكون الدول العربية من أكبر المستفيدين من التكنولوجيا الحديثة، رغم أنه من الممكن التغلب على التحديات والعواقب، إلا أن هذا الأمر يعود إلى إمكانية توظيف التكنولوجيا الحديثة عبر خلق الحكومات الدعم اللازم والمناسب لإستخدامها.

Further Afield

Upcoming Events

- [December 7: Data Collection and Artificial Intelligence: The Best Technologies for the Benefit of the Farmer](#). Event covering the development of agricultural robotics and autonomous systems.

AI, Food Security and Food Waste

- [How AI Can Unlock a \\$127B Opportunity by Reducing Food Waste](#)
- [Artificial Intelligence Could Stop Millions from Going Hungry by 2030](#)
- [How AI-Driven Technology Is Increasing Food Security, And Improving The Lives Of Farmers Worldwide](#)
- [How Technology can Help Avert Food Waste](#)
- [Can the Wi-Fi chip in Your Phone Help Feed the World?](#)
- [Nosh Uses AI to Help People and Businesses Cut Down on Their Food Waste](#)
- [AI for Agriculture and Global Food Security with Nemo Semret \[Podcast\]](#)

Future of Farming

- [The Future of Farming: Artificial Intelligence and Agriculture](#)
- [Pushing the Bounds of Future Farming](#)
- [AI Helps Design the Perfect Chickpea](#)
- [Will Artificial Intelligence Solve Some of the Pressing Issues in Namibian Agriculture](#)
- [Using Artificial Intelligence, Agricultural Robots are on the Rise](#)
- [Being a Farmer in the Age of Robotics and AI \[TED Talk\]](#)
- [COP26 Spotlight: Eagle Genomics and New Frontier of Microbiome Data](#)

Benefits and Innovations

- [Artificial Intelligence for Agriculture Innovation](#)
- [How Artificial Intelligence is Improving Agriculture \[Podcast\]](#)

Digitalization

- [Digitalization and AI in European Agriculture: A Strategy for Achieving Climate and Biodiversity Targets?](#)
- [Data-as-a-Tool to Empower Smallholder Farmers](#)

Machine Learning

- [Machine Learning in Agriculture: A Comprehensive Updated Review](#)

Gender

- [Supporting Women Farmers in the Age of Climate Change: Why It's Time To Look at Agriculture Solutions Through Both a Gender and Climate Lens](#)
- [This Woman Entrepreneur's Start-up has Developed an AI-based Crop Protection Drone for Climate-smart Agriculture](#)

Links in Spanish

- [La inteligencia artificial al servicio de la agricultura](#)
- [Innovaciones de la inteligencia artificial en la agricultura de precisión](#)

- John Deere y la Inteligencia Artificial en la agricultura
- La aplicación de las mejores prácticas de la inteligencia artificial en el contexto de la agricultura puede ayudar a superar la brecha digital y, al mismo tiempo, hacer frente a la inseguridad alimentaria
- Inteligencia artificial en la agricultura, llave de la productividad
- Estudio del uso de técnicas de inteligencia artificial aplicadas para análisis de suelos para el sector agrícola
- El Internet de las cosas y la inteligencia artificial, al servicio de una agricultura de alta precisión
- Robótica e inteligencia artificial para salir del hambre
- Agricultura con inteligencia artificial en zonas rurales

Links in Arabic

- اليونسكو: الذكاء الاصطناعي هيمن على الإنتاج العلمي خلال الأعوام الأخيرة
- الزراعة الذكية باتت حقيقة.. فماذا أعددتنا لها
- لإنقاذ ملايين من الجوع.. الذكاء الاصطناعي والنانو تكنولوجي يغيران مستقبل الزراعة

Links We Like #34

Publication Date:
January 17, 2022



The Creative Arts and AI: The Ultimate Collaboration (or Competition)?

Repetitive, structured, and monotonous are adjectives often associated with Artificial Intelligence (AI) and Machine Learning (ML). Normally these tools are not linked with being creative, let alone with the creation of art. However, in recent years this perception has changed and, increasingly, artists are breaking barriers and using AI and teaching ML models to create art pieces, music, films, and more. For example, [Refik Anadol](#) (a Turkish-American artist) was inspired by the movie Blade Runner to create abstract and futuristic exhibitions and architectural pieces using data-driven ML algorithms. In the film industry, BAFTA-nominated filmmaker [Oscar Scharp](#) created [Sunspring](#), an experiential science fiction short that was written entirely by an AI model named "Jetson", which was fed hundreds of sci-fi TV and movie scripts. Likewise, in the music industry, artists are using programs such as [Amper](#) and [AIVA](#) to create hit [songs](#) and even a complete [album](#) using AI. These are just a few examples of different ways human artists have relied on AI tools to create their art, and how it has even helped unleash a "golden age" of creativity powered by AI.

Is AI Creative?

The question remains if AI can be creative on its own (therefore replacing human creativity), or whether this characteristic is solely reserved for humans? [Arushi Kapoor](#), CEO and co-Founder of ARTSop art consulting and [Arushi](#), expressed her opinion on the matter and insisted that, although technology and AI have proven to be powerful tools, they are not replacements for the essence of the art which is human creativity. Similarly [Kelland Thomas](#), Dean of the College of Arts and Letters and a Professor of music and technology at the Stevens Institute of Technology, agrees, stating that (for now) AI will continue to be used as a complement to human creativity, rather than as a replacement. Therefore the question shifts from who will replace who, to: how can AI and humans collaborate to create innovative masterpieces?

Unleashing Human and AI Creativity

German AI-art pioneer, [Mario Klingemann](#), has found AI to be a valuable collaborator and means to explore his creative side, despite his lack of skill in traditional techniques, such as painting and drawing. Music producer [Lucas Cantor](#) also turned to AI to accomplish the challenge of finishing [Schubert's 'Unfinished' 8th Symphony](#). The mental health institute [Over the Bridge](#) leveraged AI to imagine what the well-known "27 Club" (including famous artists such as Kurt Cobain, Amy Winehouse and Jimi Hendrix, who died at the age of 27) could have created if they were still alive in the [Lost Tapes of the 27 Club](#) project. Through these examples we can see how AI is being used in the creative arts to not only create groundbreaking pieces, but also to try and rewrite the past and show us what could have been. There are still many



unanswered [questions](#) concerning piracy, plagiarism, originality, and creativity around the use of AI to build and produce art, but there is no question that this innovative way of approaching the arts is a force to be reckoned with, that will continue to push boundaries across all creative industries.

Join us in this [Links We Like](#), as we explore AI's creativity, and some of its applications in the creative arts sector, including tools you can use to explore your creativity with AI's help. Resources are available in English, Spanish, Portuguese, and Arabic.

[Can Machines And Artificial Intelligence Be Creative?](#) [Video - Bernard Marr's Youtube Channel]

In a conversation with best-selling author [Bernard Marr](#), Oxford Professor [Marcus du Satoy](#) explains the argument of AI creativity, which inspired his book "[The Creativity Code: Art and Innovation in the Age of AI](#)". Professor du Satoy begins the conversation by highlighting professor [Margaret Boden's](#) definition of creativity as "something that is new, surprising and that has some sort of value." He compliments this definition with psychologist [Carl Rogers'](#) reflection that creativity is also a tool to explore ours and others' conscious world, as well as the combination of the two. Based on these definitions, professor du Satoy presents instances where he has seen AI take on these attributes. For example, he recounts how in an unexpected move, Google's AI AlphaGo (a program designed to play the ancient Chinese game of Go) beat the best players in the world. This move was new, it was surprising and it definitely had value, as it was the key move that ended up winning the game. Du Satoy also exemplifies AI's creative power with the story of a jazz AI improviser that listened to the patterns of jazz music and used them to "reply" to a human player. What was striking about this example was the reaction of the human jazz player, who was surprised with the pattern of the AI improviser which he hadn't thought of before. Through this example professor du Satoy argues that AI is ultimately a catalyst to push human creativity and that if there is a collaborative relationship between human artists and AI, they can break new ground and push creative boundaries.

[Machine learning e inteligencia artificial para revolucionar al mundo del arte y la creatividad](#) [Article, in Spanish - Estrategia y Negocios]

En 2018, [Cristóbal Valenzuela](#), [Alejandro Matamala](#) y [Anastasis Germanidis](#) crearon [Runway](#), una plataforma que permite crear producciones audiovisuales, musicales y de arte por medio de inteligencia artificial. Según una [publicación de Entrepreneur.com](#), esta startup chilena permite a creadores, aficionados, artistas plásticos y otros artistas de la industria cinematográfica utilizar algoritmos en sus trabajos. Así, Runway se apuesta a que por medio de su software en la nube las personas puedan desarrollar "contenido sintético", lo que quiere decir generar, modificar y editar contenido audiovisual de forma automática mediante algoritmos. El objetivo del proyecto es democratizar el acceso a esta tecnología y han recibido respuestas positivas de ingenieros de Google, Facebook y universidades en Estados Unidos. Como lo menciona Alejandro Matamala, uno de los creadores y egresado de la Universidad de Nueva York (NYU): "si ponemos estas herramientas en manos de personas que nunca antes han accedido a ellas, empezarán a pensar en nuevas formas de producir arte, generar contenido y contar historias".

Exposição artística usa inteligência artificial em parceria com a Microsoft [Article, in Portuguese - LuLacerda]

Em 2019 a artista plástica brasileira, Kátia Wille, lançou uma exposição artística interativa que utiliza inteligência artificial para oferecer experiências personalizadas aos seus espectadores. As obras foram expostas no Museu da República no Rio de Janeiro. A partir de uma parceria com a Microsoft, a artista utilizou serviços cognitivos disponibilizados na **nuvem** da empresa para programar os movimentos e falas das obras, proporcionando novas maneiras de consumo e interação com a arte. A exposição "**Das tripas coração**" é composta por três obras que interagem com o público de formas distintas a partir do uso da tecnologia. Uma das obras se modifica de acordo com a leitura de expressões faciais que refletem os sentimentos dos visitantes. Já outra, se movimenta em resposta à proximidade e deslocamento do espectador nas suas proximidades. Por fim, a partir da leitura de voz possibilitada pela inteligência artificial, uma das peças expostas oferece a possibilidade de interação por meio da fala, respondendo aos diversos questionamentos dos visitantes. Em uma publicação do **Museu da República**, Kátia Wille expressou que o objetivo final da exposição é que ela sirva como um espelho no qual humanos possam se enxergar e serem enxergados por meio da tecnologia.

Robot Artist to Perform AI Generated Poetry in Response to Dante [Article - The Guardian]

Dante's "**Divine Comedy**" is one of the most **renowned** works of poetry of all time. Written 700 years ago, his work features the Roman poet Virgil as his guide through Hell and Purgatory. In the play, Virgil represents both the epitome and limitations of human knowledge. Ironically, as AI becomes more prevalent, we currently face questions about the limitations of human knowledge when compared to our digital counterparts. These questions came into stark relief with the world's first publicly performed robotic poetry reading (in response to Dante), which was written by AI algorithms. The robot performer, **Ai-da**, is a realistic looking model, designed in Oxford by Aidan Meller. Her hyper-realistic look is accomplished through the use of silicone skin, hair, 3D printed teeth and integrated eye cameras.

This interesting article highlights both the incredible capabilities of the robot, but also the implications for a future in which machines might be responsible for creating content that "in turn shapes and impacts the human psyche and society". It raises timely questions about the future of creativity, and if AI can truly compete with some of the greatest human artistic achievements.

'It's a War Between Technology and a Donkey' - How AI is Shaking Up Hollywood [Article - The Guardian]

This article, published in The Guardian in 2020, is still worth a read. The author, Steve Rose, argues that while tech innovations have inundated movie-making for the last few decades (or arguably since the cinema's inception), the movie business has continued to run on "hunches". Recently, however, AI has begun to be adopted by various companies in attempts to predict hits and eliminate flops. Warner Bros, for example, is already using a management system developed by a startup (**Cinelytic**) to inform decision making about "content and talent valuation". In other words, they forecast whether a specific movie will do better by casting Emma Stone or Emma Watson in the leading role. Incredibly, Cinelytic claims an 85% accuracy of box office forecasting.





A different approach with the same objective is the application of AI to scriptwriting. ScriptBooks is one of the companies following this path; in fact, they measure over 400 parameters to assess a script's potential success. According to Nadira Azermai, the company's founder, the story has the "highest predictive value". Next to these initiatives, stands -of course- Netflix. The value of their algorithms, created not only to suggest content to viewers, but also make content creation decisions is first-rate, and it is no wonder that many other creators (Apple, Amazon, HBO) have also launched online streaming platforms. Despite these interesting advances, the author points out some important potential drawbacks from these practices, and wonders if by eliminating financial risk, AI is eliminating creative risk as well, which is at the core of great movie making. Check out the piece to form your own opinion.

التداخل بين الفن والذكاء الاصطناعي | الروبوت آي-دا [Video, in Arabic - TED] آي-دا، أول روبوت فنّان على شكل إنسان مجهّز بالذكاء الاصطناعي من تصميم مدير معرض أكسفورد الفني اللامع أيدن ميلر. في محادثة أبهرت الإعلام والحاضرين عام 2020 في مؤتمر TEDx أطلت آي-دا على الحاضرين لتبهرهم بذكائها ومهاراتها الفنية. باعتبارها أول روبوت فنّان، آي-دا فنّانة معاصرة و تعبر عن الفن المعاصر من خلال استخدام نماذج الذكاء الاصطناعي والتقنيات الحديثة. في بداية المحادثة، طرحت آي-دا أسئلة تدور يوميًا في ذهننا؛ "كيف تعمينا التكنولوجيا؟ هل نخفي أنفسنا من خلال التكنولوجيا معًا؟ من أو ما الذي يصبح خفيًا وإلى أي مدى؟"

Further Afield

AI for Movie Making

- [AI-Generated Film: The Next Phase in Movie Making](#)
- [AI as a Movie Maker](#)
- [AI Magic Makes Century-Old Films Look New](#)
- [How Artificial Intelligence Is Used in the Film Industry](#)
- [A.I. Is Coming! World's First A.I. Created Ad Lexus ES AI Commercial Full Length Directors](#)
- [AI is learning how to make you cry at the movies](#)
- [Inteligencia artificial en el cine: ¿cuánto de realidad hay en la ficción?](#)
- [Inteligência artificial cria trailers de filmes sem ajuda de humanos - Canaltech](#)

AI to Generate Art

- [Art AI gallery](#)
- [The Role of AI in Art Creation](#)
- [Researchers train AI to attribute paintings based on detailed brushstroke analysis](#)
- [La inteligencia artificial y las artes. Hacia una creatividad computacional.](#)
- [Inteligencia Artificial \(IA\) y Machine Learning aplicado a las artes visuales](#)
- [Inteligencia artificial y arte interactivo en el caso de estudio: UNCANNY MIRROR \(2018\) de Mario Klingemann](#)
- [Obvious y el arte generado por la inteligencia artificial](#)
- [Exposição "IA Inteligência Artificial – Irreversível. Agora." estreia na Cidade das Artes e apresenta ao público os possíveis rumos desta tecnologia | Site Obras de Art](#)
- [Aplicativo usa IA para criar imagens apenas com base em palavras escritas - Canaltech](#)
- [Katia Wille: exposição com inteligência artificial em parceria com a Microsoft | Lu Lacerda | iG](#)

• الذكاء الاصطناعي يخلق ثورة في عالم الفن

AI in the Music Industry

- How Artificial Intelligence (AI) Is Helping Musicians Unlock Their Creativity
- Inteligencia artificial y música: ¿Cómo suenan algoritmos y canciones?
- Inteligencia artificial y música: composición musical
- This start-up uses A.I. to help music producers create the perfect song
- 'He touched a nerve': how the first piece of AI music was born in 1956
- How Spotify and Amazon are using A.I. to learn your preferences—and even read your mood
- Conheça a startup brasileira que utiliza inteligência artificial para identificar novos talentos da música e conectá-los com investidores (resumocast.com.br)
- Reconhecendo gêneros musicais brasileiros com técnicas de aprendizagem de máquina supervisionada

How AI is Changing the Creative Industries

- How A.I. Is Creating Building Blocks to Reshape Music and Art
- Can AI automate the film industry?
- How AI is changing music as we know it
- AI could help us deconstruct why some songs just make us feel so good
- La inteligencia artificial cambia la manera de crear y escuchar música
- Robô que gera um playlist no Spotify usando machine learning e os trend topics do twitter
- Machine learning desvenda as características musicais que geram respostas fisiológicas e emocionais nas pessoas - IA Expert Academy
- Sony Music Brazil lança programa de aceleração para impulsionar o desenvolvimento de IA no mercado
- La inteligencia artificial irrumpe en el cine para anticipar los gustos del público
- La inteligencia artificial que podría revolucionar la industria fílmica

- الذكاء الاصطناعي على وشك إتقان الفنون الإبداعية
- كيف يساعد الذكاء الاصطناعي في إنتاج الفنون
- سباق في السعودية على أعمال فنية للذكاء الاصطناعي

Human vs. AI Creativity

- AI Music Is Good, but It Won't Replace Human Creativity
- Can Computers Be Creative? A Look At AI Use In Music Composition
- AI and music: will we be slaves to the algorithm?
- New AI art has artists, collaborators wondering: Who gets the credit?
- AI can make music. But will it replace your favorite musician?
- Artificial intelligence can now make art. Artists, don't panic.
- الشيفرة الإبداعية: "الفن في عصر الذكاء الاصطناعي"

Tools to Make Art and Music Using AI

- AIVA
- 41 Creative Tools to Generate AI Art
- Deep Dream Generator
- This AI art app is a glimpse at the future of synthetic media
- AI That Can Generate Music



Links We Like #35

Publication Date:
March 3, 2022

The Future of Financial Inclusion: How New Technologies are Reshaping FinTech

Financial inclusion, or access to formal financial services, (such as bank accounts, credit, and loans) is one of the most valuable tools for breaking **cycles of poverty**. Unfortunately, an estimated **1.7 billion** people worldwide remain “unbanked”, or lacking access to these services; half of which live in just 7 middle-income countries: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan. This situation hinders upward financial mobility for those already in a position of financial vulnerability (especially in developing economies and rural areas). Fortunately, new technologies, including AI and blockchain, are providing new and innovative solutions in increasing access to formal finance.

What Are The Technologies?

Blockchain systems can provide transparency and data aggregation to banks’ databases, allowing clients to establish loan conditions and process their requests into contracts that are then saved on-chain. AI can also be leveraged in the banking sector in two important ways: first, to gain insights and make predictions on market conditions and customers’ needs and risk profiles; and second, to enable technologies that allow users to access financial services remotely and effortlessly. As part of the **first application of AI**, many financial institutions have adopted this technology to strengthen and simplify operations, including model creation for customer and market analysis, such as capital optimization, risk management, stress testing, and impact analysis. Additionally, AI can provide constant real-time analytics and monitoring of banking systems and send out immediate alerts if unusual activity is detected, thereby helping to prevent security breaches. Regarding the second application, AI has aided in the development of **chat boxes**, which allow banks to offer 24/7 financial guidance and connect those living in remote areas to their financial institutions (even if there is no banking branch nearby). Through these **communications channels**, banks have also been able to provide more detailed information to their users on financial health and how different services function. These initiatives are transforming the financial sector by providing more user-friendly services and also helping increase access to banking and financial services for the unbanked.

How Are They Being Implemented?

Examples of this technological progress abound around the globe and include Nigeria’s United Bank for Africa (UBA) banking chatbot, called **Leo**, which helps customers conduct various transactions without having to physically go to a bank branch. In Mexico, a platform called **Konfio** gives loan disbursements to small-and medium-sized enterprises within 24 hours and allows the applicant to see if they are eligible for the loan (and amount) in only 7 minutes. The **technology** this company uses to provide such quick and accurate responses is artificial intelligence, which allows the system to predict the client’s payment capacity and subsequently make an offer that suits their company. In

Southeast Asia, an online marketplace for lending (P2P lending) and investments (crowdfunding), called [Crowdo](#), utilizes an AI-driven due diligence system to give borrowers unable to receive a loan from traditional banks an equal opportunity to raise funds.

What Are The Risks?

Although there are many different initiatives currently being used or developed (including those mentioned above), it is important to keep in mind that AI technologies are also susceptible to human biases if not carefully deployed. AI applied to the finance sector can present privacy issues and even discrimination if algorithms are not implemented with sufficient care. To counter these potential risks, various initiatives such as [Women's World Banking](#), [Artificial Intelligence/Machine Learning Risk & Security](#), or [AIRS](#), and the [Center for Financial Inclusion](#) are working hard to identify potential risks and biases, spread awareness, and develop mitigation strategies to ensure that AI-based tools produce more equitable outcomes.

Join us in this edition of Links We Like as we explore how new digital technologies are being used to increase financial inclusion.

Episode 76: Providing Financial Inclusion with Data Science [Podcast - Data Framed]

In this episode of the DataFramed podcast, Vishnu V Ram, VP of Data Science and Engineering at [Credit Karma](#) speaks about "Providing Financial Inclusion with Data Science." The company, which has over 170 million users, states its mission as using data to democratize financial information to allow users to make healthy financial decisions. Mr. Ram explains various use cases in which data science technologies, including machine learning, are leveraged to allow users more certainty as to their chances of being approved for various financial products. Moving beyond this, the service also provides recommendations, based on users' credit data, as to which products would be most beneficial to them. This is especially useful for lower-income populations who often have stressful and unproductive encounters with financial institutions. Overall, this podcast episode provides an insightful overview of how data and machine and deep learning models are influencing FinTech and changing users' experiences with the financial sector, as well as what the future might hold as these technologies advance.

The Impacts of Digital Financial Services on Women's Economic Empowerment [Report - Bill & Melinda Gates Foundation]

The [Bill and Melinda Gates Foundation](#) report on "The Impacts of Digital Financial Services on Women's Economic Empowerment" provides evidence from several countries that access to Digital Financial Services (DFS) promotes women's economic empowerment. The main points covered include increasing women's bargaining power within households and more decision-making power in terms of money management and purchasing choices. DFS can also expand women's networks and enhance access to capital during emergencies. The report suggests that DFS access increases consumption among women, enables women to shift to higher productivity occupations, and allows for more women to join the workforce. Evidence from Kenya shows that 8 years after DFS implementation, the share of female-headed households living in extreme poverty decreased by 21%. In India, the report highlights that DFS improves women's labor force participation, especially for those whose husbands had constrained their ability to work. The report also points out how DFS catalyzes and influences other aspects of women's economic empowerment, such as facilitating subsidized microcredit, and access to agricultural inputs, information, and digital networks. This insightful article provides an in-depth analysis of the benefits of DFS, how it works and areas for future research.

Creating Economic Identity for Refugees | Hamse Warfa [Video - TED]

Refugees are some of the most financially excluded populations in the world. This is often the result of the act of seeking refuge, which doesn't leave time (or ability) to collect all of the documents that "make a life", including formal identification, financial history, medical records and everything else that is needed to participate in the modern global economy. This lack of verifiable personal information can therefore compound the trauma of refugee life. But what if there is a way to solve this problem? In this powerful TedTalk, former Somali refugee Hasme Warfa speaks to his experience with this very subject during his time in a Kenyan refugee camp. He goes on to highlight the role that blockchain can play in connecting not only refugees, but also those currently living in extreme poverty, to the global financial system. Doing so can help to both enhance livelihoods and also to restore the dignity and sense of self so often lost when people are forced to flee their countries.

Grab Aims To Drive Financial Inclusion Towards Realizing Thai 4.0 [Article, App - Grab]

With over 214 million mobile downloads, representing about 30% of Southeast Asia's population, the Thai-based app **Grab** has become a beacon of technological innovation that provides inclusive financial solutions for the unbanked in the region. By creating alliances with many banking institutions, the Grab app allows its users to find an easier way to access digital payments and financial services, which in turn helps them improve their livelihoods. Grab offers a variety of financial services, including personal loans, hire purchase loans for their driver-partners, and small-and-medium-sized enterprise financing to all merchant-partners. The app has grown impressively in the region and is the only company that has access to e-money licenses in the six major economies of the ASEAN block (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam), and has facilitated the opening of over 1 million bank accounts. Through these services, the company is fulfilling its purpose by ensuring that everyone, regardless of their financial or social status, can access income-generating opportunities through their platform.

Tech Can Reach The World's Unbanked Women - But Only if They Tell Us How it Should Work [Article - World Economic Forum]

Women make up the majority of the world's unbanked population, numbering over a billion without access to formal financial services. This lack of access translates into the inability to protect money by opening savings and checking accounts or to utilize services such as loans, credit, and insurance. While the need to connect the "unbanked" to banking services is clear (and aided by a variety of technologies, including AI and blockchain), there is also a need to recognize the gendered differences that are inhibiting access. For women, this often includes a lack of formal legal identity (the subject of SDG goal 16.9). This article explores how organizations, including **Women's World Banking**, are working to provide women with access to both digital IDs and financial services, to ensure that they are not left behind by the FinTech revolution.

Blockchain In Payment: Accelerating Payment Services [Article - 101 Blockchains]

Blockchain opens many new opportunities for businesses, including a better system for asset management, more efficient payments, and more accurate data security measures. According to a Deloitte study, analysts project that, by 2022, blockchain can **save \$15-20 billion** annually in the financial services industry. Another source shows that between 2013 and 2016, non-currency assets using blockchain have grown **16-fold (to \$1.6 billion)**. These indicators reveal that financial systems that utilize blockchain technology have a higher return on investment, evidenced by a **cost reduction** ranging from 1 to 3 percent when compared to those using traditional payment methods. Blockchain technology enables direct trading and settlements across boundaries, while also reducing cost and increasing data

accuracy. [FundsDLT](#), a blockchain-powered funds distribution platform, is a great example of blockchain technology intervention in the asset management industry. Additionally, blockchain has also immense potential to curb cybercrimes, terrorism, and money laundering.

Further Afield

What Role Does AI Play in Financial Inclusion?

- [Risks, harms and opportunities in data-driven technology for financial inclusion](#)
- [Banking for all: Can AI improve financial inclusion?](#)
- [The Role of Artificial Intelligence in Promoting Financial Inclusion in Developing Countries](#)
- [Podcast: The History of Financial Inclusion](#)
- [Socially responsible banking: A digital path to financial inclusion](#)
- [How to harness AI and data portability for greater financial inclusion](#)
- [AI: A game-changer for financial inclusion](#)
- [Industry 4.0 in Finance: The Impact of Artificial Intelligence \(AI\) on Digital Financial Inclusion](#)
- [Increasing Financial Inclusion through AI and data portability](#)
- [#73 Scaling AI Adoption in Financial Services](#)
- [The Use Of Artificial Intelligence And Alternative Data In Financial Services: Force For Inclusion?](#)
- [Artificial Intelligence in Financial Services: Applications and benefits of AI in finance](#)

Emerging Uses of AI in The Financial Sector

- [4 Emerging Technologies in the Financial Services Industry: Which Solutions Are You Taking Advantage of?](#)
- [AI in finance](#)
- [What new financial technologies emerged during the pandemic?](#)
- [Seven technologies shaping the future of fintech](#)
- [17 Fintech Trends You Should Know About: The Ultimate Guide](#)
- [Data science and AI in FinTech: an overview](#)
- [Blockchain and other emerging technologies for financial services](#)
- [The Growing Impact of AI in Financial Services: Six Examples](#)

Blockchain for Financial Inclusion

- [Leveraging Blockchain for Financial Inclusion](#)
- [Blockchain and Financial Inclusion: The Role Blockchain Technology can play in accelerating Financial Inclusion](#)
- [Blockchain: the potential to unlock financial inclusion](#)
- [Impact of Block-Chain Technology on Financial Services](#)
- [Blockchain for Financial Inclusion and Mobile Financial Services](#)
- [The Danger Of Not Understanding Blockchain And Its Impact](#)

Examples of AI for Financial Inclusion

- [Accelerating financial inclusion in India](#)
- [Finclusion raises \\$20M to build out credit-led neobank offering across Africa](#)
- [African SMEs need credit: FinTech to the rescue?](#)
- [Inside the Jordan refugee camp that runs on blockchain](#)
- [CARE tests cryptocurrency vouchers for aid delivery in Kenya, Ecuador](#)
- [Digital Identification and Finance Initiative in Africa \(DigiFI Africa\)](#)
- [Women's Digital Financial Inclusion in Africa](#)
- [Women's World Banking - Making Data Work for Women: Innovative AI for Women's Financial Inclusion](#)

Links We Like #36

Publication Date:
March 30, 2022



Crisis Data: New Technology in Humanitarian Emergencies

Accurate data is pivotal to identifying and responding to the needs of those impacted by a variety of shocks, including violent conflicts, environmental disasters, epidemics, and other life-threatening emergencies. By gathering and processing personal, public, and geographic data, aid organizations, humanitarian workers and other relevant actors are able to not only deploy more targeted responses to ongoing crises, but also develop risk reduction strategies based on previously identified patterns. Despite its crucial role in identifying and assessing crisis situations –if mishandled– data can also lead to serious negative outcomes for already vulnerable groups. For instance, in 2021 [Human Rights Watch](#) reported that the Government of Myanmar accessed private information on Rohingya refugees (including biometric data) four years after UNHCR’s creation of a detailed database for this persecuted population. It is therefore imperative that organizations are prepared to responsibly and ethically manage their data collection and assessment methods in order to prevent a variety of risks that may arise from such mismanagement. Nevertheless, there is a growing need for data in the humanitarian sector, as the lack of precise information may result in inequitable and imprecise responses that are likewise harmful to the crisis-affected populations.

Using Data for Humanitarian Emergencies

In terms of how traditional and non-traditional data has been used to assist in humanitarian crises, there are several examples that show just how valuable this information is to first responders and those working to develop assistance strategies. Several organizations such as [Doctors Without Borders](#), the [Red Cross](#), the [United Nations Children’s Fund](#), [Crisis Ready](#) and [OCHA](#) are actively working towards gathering and making available accurate and timely information to manage different types of crises. Some examples include OCHA’s [Humanitarian Data Exchange](#) portal; the [Relief Web](#) to provide 24-hour coverage of different crises to help guide the international aid community; the [Migration Portal](#) from the [International Organization for Migration Global Migration Data Analysis Center](#) which provided timely, comprehensive migration statistics globally; and the [Digital Humanitarian Network](#), which supports humanitarian responses through digital networks. UNHCR also runs the [Operational Data Portal \(ODP\)](#), which was created in 2011 to collect information and data to help facilitate coordination during refugee emergencies. This portal contains information on several different refugee crises, including the current situation unfolding in [Ukraine](#), and maps daily refugee influxes towards destination countries. In addition to the valuable work of these large organizations, there have been several instances where different actors have created very useful crisis response tools. One key example was the creation of [Ushahidi](#), a non-profit that used crowdsourcing to develop an interactive mapping platform to plot outbreaks of violence following the 2008 Kenyan presidential election. It was also used after the 2010 Haiti earthquake, allowing first responders

to locate victims much more quickly with the information it provided. [UN Global Pulse](#) and [UNCHR Innovation Service](#) also conducted a project using Twitter data to understand the utility of data-driven evidence into decision-making processes, particularly in developing policies to address xenophobia, discrimination and racism towards migrants and refugees in Europe after 2015.

Using Digital Technology for Humanitarian Emergencies

Additionally, there are a myriad of [digital technologies](#), including mobile applications, chatbots, unmanned aerial vehicles and biometrics, that can be leveraged to aid communities affected by humanitarian crises. For example, WFP (together with the Government of Jordan, Mastercard, UNHCR, Cairo Amman Bank and IrisGuard Inc.) introduced iris scan payments in Jordan's Zaatari and Azraq refugee camps through the [Building Blocks](#) program, which enabled 1.5 million Syrian refugees to use digital money to buy food and access basic services with an eye scan. The WFP also used [mVAM](#) to set up an SMS survey in 2013 to collect data on the effects of the Ebola outbreak in Sierra Leone, Guinea, and Liberia, despite movement restrictions on humanitarian staff. Using surveys reduced data collection costs by 50% versus face-to-face interviews. Another example is the [Safety Check Service](#), offered by Meta, which provides user-generated data on who is in danger after a natural or humanitarian disaster. The [Missing Maps](#) initiative, a collective of different organizations and volunteers, was key in helping the International Committee of the Red Cross in providing assistance to the over 230,000 people affected by the flooding in Malawi in 2015 who were located in unmapped areas of the country.

Risks in Using Data and Digital Technology with At-Risk Populations

Although these initiatives and projects have been tremendously helpful in dealing with humanitarian emergencies, they also pose risks that can further endanger already vulnerable populations. Particularly in the case of [refugee emergencies](#), data with too much visibility can compromise existing legal rights and procedural guarantees that are necessary to safeguard their lives. In such cases, the organizations involved in collecting and using this type of data have the responsibility to ensure that these risks are mitigated. Regarding the currently unfolding Ukrainian crisis, [Google Maps](#) made the decision to stop providing live traffic data in order to protect Ukrainian civilians who have not fled the country. These actions demonstrate the importance of being aware of the ethical and safety concerns of using new technologies during humanitarian emergencies.

Join us in this edition of [Links We Like](#) as we explore the promise of new technologies to aid in the response to humanitarian crises, as well as the ethical concerns and risks that accompany the use of these technologies.

[From Digital Promise to Frontline Practice: New and Emerging Technologies in Humanitarian Action](#) [Report - ReliefWeb]

This United Nations Office for the Coordination of Humanitarian Affairs (OCHA) report comes amidst the backdrop of ever-increasing need for humanitarian aid, with individuals requiring assistance growing from 78 million in 2015 to over 235 million in 2021 (and this was before the recent outbreak of war in Ukraine in 2022). The report highlights that while funding has also increased, it is impossible for those funds to "keep up", but rather must be made to go farther. The report argues one way to achieve this is through the use of digital technologies for humanitarian endeavors. Some of these include AI, mobile applications, chatbots, social media, unmanned vehicles and biometrics. The report details the promise that each of these (and other) technologies has shown, including during the response to the COVID-19 pandemic. However, it also highlights the risks involved in their



adoption, again looking to COVID as an example. Additionally, the question of digital access also becomes more salient, as those in the most need may also be the most deprived of access to digital technologies. Based on interviews with sector experts, it is divided into 3 sections, covering opportunities and challenges, enablers of adoption, and recommendations for future project design. Overall, this interesting and timely study provides a helpful overview of what the future of humanitarian aid may look like.

Fixing Aid | How this Afghan-led Business Pivoted to Emergency Aid [Podcast - The New Humanitarian]

This episode of The New Humanitarian's "Fixing Aid" podcasts takes us to Afghanistan, a country facing an ever-worsening and multifaceted humanitarian crisis following the Taliban takeover in 2021. The sheer scale of the economic collapse (in a country already facing instability) is hard to comprehend, including half a million jobs lost (14% of those employed), and countless more who haven't received a salary in months. Members of the Afghan diaspora community often watch with frustration and helplessness from abroad as their home country encounters increasing economic and social devastation. Against this backdrop, one former Afghan refugee, Nasrat Khalid, whose family eventually settled in the United States, found himself in a unique position to offer assistance. Nasrat, founder of the e-commerce company [Aseel](#), which formerly sold Afghan arts and crafts, pivoted to a platform for aid delivery. He tells the story of his company, originally conceived as a way to directly increase the incomes of artisans in the country (in addition to showing the world a different "face" of Afghanistan, outside of dire headlines). However, following the US military withdrawal from the country in 2021, the company shifted its focus. The staff within Afghanistan visited refugee camps and asked former artisans what they needed now, which was most often basic necessities and food. The direct connection between the company and those facing hardship proved to be an effective model. Overall, this interesting podcast highlights how innovative new approaches can help in even the most dire of humanitarian crises.

Ukraine Data Explorer [Platform - The Humanitarian Data Exchange]

The Humanitarian Data Exchange (HDX) is a platform that compiles and shares humanitarian data from different organizations. The organization is part of OCHA/UN Secretariat. Humanitarian data relates to: the context in which a humanitarian crisis takes place; the people affected by the crisis; and the response from institutions providing aid. The HDX compiles databases on more than 254 locations from 1758 sources and special data visualizations platforms for situations such as the COVID-19 and Ukraine Crisis.

Ukraine Data Explorer: This is a platform maintained by HDX, which provides updated information about humanitarian impact, funding, and conflict events in Ukraine. In the Humanitarian Impact section, users can check the number of civilians killed or injured in attacks on healthcare or education facilities, and the number of refugees and internally displaced people. The platform also provides various interactive maps on attacks, which distinguish between battles, attacks against militaries, and violence towards civilians. This initiative is valuable for humanitarian response for several reasons. In short, it provides compiled data and indicates where action is most needed, and may serve as a guide for humanitarian organizations on-site or sending aid from outside the country. For example, the platform points out the number of humanitarian organizations across different parts of the countries and the "hot spots" of attacks, indicating where humanitarian assistance is scarce and, therefore, more needed.

Data Collection on VAWG: Conflict/Post-Conflict [Resource Toolkit - UN Women]

In the past decades, the literature on the subject has come to the agreement that conflict and violence against women and girls (VAWG) are interlinked. Authors explain that often women's bodies are used as weapons of war, thus becoming another space for battle and destruction. As a result, several organizations have attempted to measure the phenomenon of gender-based violence in the context of armed social conflict. This toolkit provides a framework to implement data collection efforts during such events and afterwards, as well as guidelines and links to other resources.

Digital Humanitarians: How Big Data is Changing the Face of Humanitarian Response [Book - By Patrick Meier]

The overflow of information stemming from computers, cellphones, social media, news, drones, sensors and satellite images that takes place in the wake of a disaster is now so overwhelming that it can prevent policy makers and aid workers from action. This book offers a guide to help practitioners make sense of this large stream of Big Data that is created during humanitarian crises. The book also discusses the role of digital humanitarians, who can be volunteers, students or professionals capable of processing and analyzing this data, to help humanitarian organizations when these skills are needed. Overall, this is an excellent resource created by an expert in the field.

Digital Identity, Biometrics and Inclusion in Humanitarian Responses to Refugee Crises [Working Paper - ODI]

In Jordan, about **83% of Syrian refugees** have been registered using biometric technology. This has strengthened the abilities of the government and humanitarian agencies in providing cash assistance to refugees. This technology is particularly useful in cash transfer programs, as it ensures that the correct recipient receives the cash. The use of this technology minimizes fraud, promotes quality assurance and encourages confidence in countries receiving vulnerable refugees for resettlement. **Evidence** revealed that biometric technology is more accurate and reliable than more traditional approaches as it leads to a more secure IDs, prevents identity theft and can streamline processes by eliminating the need for multiple registrations by various organizations. It enables institutions to benefit from accuracy and unparalleled security of sensitive information. The importance of biometric has also been acknowledged in Uganda, as it has been shown to reduce fraud and enable larger amounts of aid to be delivered more securely. Despite these benefits, there are opposing views that this technology works well for countries with established digital infrastructure and would have low adoption and efficacies in managing humanitarian crises in areas with poor digital infrastructure.

Further Afield

Ukraine Crisis

- [How are the big tech companies responding to the invasion of Ukraine?](#)
- [Ukraine refugee situation](#)
- [Digital technology and the war in Ukraine](#)
- [Updates: How Tech Organizations Are Supporting Ukraine](#)
- [We Urge Satellite Imagery Firms and Space Agencies to Stand With Ukraine](#)
- [The Cyber Front in the War on Ukraine](#)
- [Ukraine: Migration Statistics, Policy and Humanitarian Responses](#)





Digital Technologies for Humanitarian Emergencies

- [Decode Surveillance NYC](#)
- [Humanitarian OpenStreetMap Team](#)
- [Malaria Elimination Mapping](#)
- [Microsoft - AI for Humanitarian Action](#)
- [The role of digital technologies in humanitarian law, policy and action: Charting a path forward](#)
- [How Syrians Pioneered Digital Tools to Stand Up to Authorities](#)
- [Digital Technologies Could Help Uganda's Economy Recover Faster](#)
- [Five ways mobile technology can help in humanitarian emergencies](#)
- [New report suggests ways to use technology to improve aid in humanitarian emergencies](#)
- [In this age of climate crisis, humanitarians need to learn to love tech](#)
- [NetHope Announces \\$15 Million Digital Breakthrough Initiative with Support from Cisco](#)
- [Strengthening Disaster Risk Management and Transport Infrastructure after a Disaster: The 2010 Haiti Post-Earthquake Experience](#)
- [From digital promise to frontline practice: new and emerging technologies in humanitarian action](#)
- [Technological innovation for humanitarian aid and assistance](#)
- [Digital Technologies and Humanitarian Action in Armed Conflict](#)

Data for Humanitarian Emergencies

- [Crisis Ready](#)
- [DIGITAL HUMANITARIANISM: USING BIG DATA](#)
- [The Humanitarian Data Exchange](#)
- [From big data to humanitarian-in-the-loop algorithms](#)
- [Reinforcing Haiti's capacities and resilience through quick data collection](#)
- [UN warns of impact of smart borders on refugees: 'Data collection isn't apolitical'](#)
- [The UN's refugee data shame](#)
- [Crisis analytics: big data-driven crisis response](#)

AI and Machine Learning for Humanitarian Emergencies

- [TED Talk: AI to the rescue, Rohit Ghosh](#)
- [Supporting Refugees with Artificial Intelligence](#)
- [Using Machine Learning to Improve Targeting of Humanitarian Aid](#)
- [Machine learning and phone data can improve targeting of humanitarian aid](#)
- [MSF REACH: the new project that could help MSF act faster in an emergency](#)

Links We Like #37

Publication Date:
May 11, 2022



The Future of Health? How AI and Big Data are Reshaping Modern Medicine

Health care is one sector for which the massive amount of data produced daily holds great promise. **Data** from electronic health records, medical devices and health-related apps (and other sources) has grown so large that they exceed human capabilities for analysis. This is where Artificial Intelligence (AI) comes into play. Through various modeling techniques, AI can help medical researchers analyze massive data sets and identify patterns, which can in turn improve medical diagnostic capabilities and health care services. AI is already being applied to improve and accelerate the accuracy of diagnosis and disease screening, develop new medications, and support public health interventions. Numerous research studies focused on AI have helped to identify diseases such as skin **cancers**, **signs of stroke**, **diabetes complications** or **eye disease**. There have also been initiatives to predict a patient's response to a treatment, including **heart transplant rejection**, **cancer treatments**, and how well **immunotherapy** will work on patients with melanoma. Besides AI models for treatment prediction and medical diagnosis, there have also been initiatives to develop tools that can increase quality of life for those living with chronic diseases. For example, **Project Euphonia** is an initiative that focuses on training speech recognition models to aid those suffering from atypical speech patterns caused by certain conditions. Through their work, they have been able to help many people who lost their speaking ability communicate with their family and friends; as in the case of American professional football player **Tim Shaw**, who progressively lost his speaking ability due to ALS.

The Risks of AI

Despite its great promise, there are many risks that must be considered when using AI for healthcare. One of the biggest risks is replicating human bias through AI models. The **Alan Turing Institute** identified this situation as one of the biggest obstacles to why, in the United Kingdom, AI had made little impact in fighting the COVID-19 pandemic. MIT Assistant Professor **Dr. Marzyeh Ghassem** also identified this risk while conducting her dissertation in computer science, when she discovered that models performed differently for certain racial minority groups. Based on this experience she concluded that algorithms developed for care delivery need to be trained with data sets that represent diverse patient populations and not designed using "**black box**" models. In other words, to avoid replicating these biases, **AI research** needs to include large, representative, and balanced data sets which have undergone testing to verify their accuracy before being used on actual patients. On this note, **Dr. Andrew Ng** also highlights **another risk**, which is that some models use data based on specific training sets that depend on local data, thus their performance may diminish significantly when/if applied in a different context.

How to Overcome These Obstacles?

Although these risks are not issues exclusive to AI's application in healthcare, it is important to design mitigation and good practice strategies to help practitioners and researchers address them. The WHO, for instance, presented a recent [global report on Artificial Intelligence \(AI\)](#) in health that maps the sector's progress, obstacles, and future, and outlines six guiding principles for AI's design and use in health. In terms of research, the [AIDE Project](#), an initiative that seeks to understand the human factors that will help or hinder the implementation of AI in healthcare, has also taken on the task of identifying how AI is expected to impact the healthcare sector and determine the main concerns that need to be addressed to promote its acceptance and adoption. There are also initiatives such as the nonprofit [Nightingale Open Science](#), that are actively working to improve the quality and scale of data sets available to researchers by collecting patient's data, anonymizing them, and granting access for nonprofit research.

Join us in this edition of Links We Like as we explore some of the ways AI is being used in the healthcare sector, from maternal healthcare to mental health. Resources are available in English, Spanish, and Portuguese.

Can a Video Game Tell If You're Depressed? [Article - The Washington Post]

[Emilia Molimpakis](#), a postdoctoral neuroscience researcher at University College London, felt disillusioned with traditional mental health care after it let down a friend of hers. Rather than complain, however, she did something about it. Recognizing the limitations faced by providers, which have only been exacerbated by the mental health care crisis stemming from the pandemic, Emilia co-founded [Thymia](#). The tool is a simple set of AI-enhanced mobile video games, which the company claims can identify depression as well as an office examination. Co-founder Stefano Gorla says this is accomplished by applying mathematical tools to extract information about the user, potentially working better than traditional self-assessments. While playing the simple games, the AI is recording a variety of reactions, which are then processed with an algorithm programmed to identify various mental health conditions. This interesting article explores the current (dire) state of mental health care and some ways that innovators are applying technology to meet these challenges. This includes new technologies, companies and applications, and even some unexpected uses for older tech, such as video games!

Aimentia: The Mental Health Platform Providing a Psychological Crutch Throughout the Pandemic [Article, In Spanish - Universitat Oberta de Catalunya]

[Aimentia Health](#), una empresa emergente impulsada por la [Universitat Oberta de Catalunya](#), usa la inteligencia artificial para recoger datos de pacientes y crear un sistema que genere hipótesis sobre el problema y sus posibles soluciones. Esta plataforma se puso a disposición del personal sanitario en España con el fin de proporcionar apoyo psicológico gratuito las 24 horas del día. En cuanto a los síntomas emergentes de salud mental, Aimentia ha sido capaz de integrarlos en su flujo de inteligencia artificial. Gracias a ello, la herramienta ya puede ofrecer sugerencias de diagnóstico primario, comparando los datos de un paciente con otros registros anónimos y detectando así posibles factores de riesgo. De acuerdo con el creador, Edgar Jorba, lo que ha creado su equipo es un lenguaje de programación basado tanto en los síntomas como en los patrones no clínicos que hace comparaciones anónimas entre perfiles, lanza sugerencias sobre posibles diagnósticos o tratamientos, y permite personalizar terapias. La plataforma se describe como un "asistente virtual" para profesionales de la psicología, la psiquiatría y la neurología.

Desarrollo de un proyecto de big data en salud pública: Proyecto Midas [Report, in Spanish - Midas Project]

El proyecto **MIDAS** es un proyecto creado en 2016 con el fin de utilizar el big data para la salud pública. MIDAS significa Meaningful Integration of Data, Analytics, and Services o "Integración Significativa de Datos, Analítica y Servicios". El proyecto está compuesto por cuatro socios: la República de Irlanda, Irlanda del Norte, Finlandia y Euskadi. Gracias a la financiación de la Unión Europea, cada socio investiga un tema en concreto haciendo uso de herramientas para el análisis del big data. La República de Irlanda busca adentrarse en el estudio de la diabetes haciendo un estudio de la distribución de recursos para la lucha contra esta pandemia. Irlanda del Norte investiga la desprotección infantil y las circunstancias que pueden llevar a que niños y jóvenes pasen a estar bajo la protección del estado (y por ende entrar o salir del amparo de los servicios sociales). Finlandia estudia la salud mental y el uso de estupefacientes en jóvenes, explorando cómo se pueden aumentar las fuentes de información para las políticas de prevención. Por último, Euskadi investiga la obesidad infantil y pretende entender sus orígenes para promover intervenciones eficientes. Así, al hacer uso de herramientas del big data, el proyecto MIDAS está teniendo un impacto importante en comunidades y resalta la relevancia de estas nuevas tecnologías -y grandes cantidades de datos- para la salud pública.

AI In Maternal And Fetal Medicine: A New Model For Mother And Child Care [Article - Dataconomy]

Artificial Intelligence (AI) is improving health care delivery systems by making medical technologies for maternal and fetal medicine accessible and affordable. With the use of AI and clinical data, medical complications and defects are diagnosed as early as possible to inform medical decisions. Whereas studies have found a link between AI and predictive medicine, their usage helps in **forecasting diseases** and other birth defects. Women who experienced complications during delivery or are unable to keep track of menstrual cycles and other vitals are able to deliver more safely and without disorder or defect. In the USA, AI is being used for menstruation tracking. It also provides actionable and real-time tips on how to improve the health of their unborn child. AI has also been increasingly used for ultrasounds, as it speeds up the process. Additionally, it improves fetal surveillance by enabling doctors and practitioners to spot, check and align fetus development with normal anatomy. Whereas embryo selection in the past has been based on morphology (appearance), the degree of accuracy is relatively low (20-35%), thereby reducing the success rate. With the use of AI, doctors can select high-quality embryos for in-vitro fertilization with **97% accuracy**, enabling women to have healthier babies.

Ferramentas de prevenção em saúde a partir da coleta de dados [Platform, in Portuguese - Eu Cuido]

Iniciativas de acompanhamento e informação por meio de tecnologias digitais têm sido desenvolvidas como alternativas inovadoras para a atenção e cuidado de pacientes em um mundo cada vez mais digitalizado. O aplicativo "Eu Cuido" coleta informações e faz recomendações de ações preventivas personalizadas aos pacientes após uma primeira consulta com um clínico geral, onde dados como o histórico familiar e costumes diários são coletados. Estes dados permitem a análise de possíveis doenças e complicações de saúde a serem enfrentadas pelo paciente, sendo assim, os médicos conseguem informar alternativas e cuidados para impedir e reverter estes possíveis cenários. Por meio do aplicativo, os pacientes também podem acessar informações coletadas durante internações e consultas, como resultados de exames e os medicamentos administrados durante internações. Os



desenvolvedores do “Eu Cuido” garantem que o sistema é centrado no paciente e conta com o monitoramento ativo da performance de saúde de maneira individual a partir da busca ativa de dados, um método baseado na medicina de evidência.

Further Afield

Big Data and AI in Healthcare

- [The AI Health Podcast](#)
- [AI in Healthcare with Dale Markowitz](#)
- [Health & Veritas: AI, Machine Learning, and Medicine](#)
- [Big Data en salud: retos y oportunidades](#)
- [La importancia del análisis de datos en la medicina predictiva](#)
- [Inteligência artificial na medicina: qual impacto para a saúde?](#)
- [Big Data e Inteligencia Artificial para optimización del sistema de salud](#)
- [Inteligencia artificial para la salud y la asistencia sanitaria en la UE](#)
- [Clinical AI Gets the Headlines, but Administrative AI May Be a Better Bet](#)
- [Eficiência do Uso de Leito e Inteligência Artificial: a Entrega de Valor em Hospitais Filantrópicos.](#)
- [Healthcare 4.0](#)

Risks of AI in Health

- [The downside of machine learning in health care](#)
- [El desafío del big data en los sistemas de salud](#)
- [The Truth About AI in Healthcare](#)
- [Healthcare Ethics in AI: Can Software Make Ethical Decisions?](#)

Future of AI in Healthcare

- [For Patients to Trust Medical AI, They Need to Understand It](#)
- [Trust is AI's Most Critical Contribution to Health Care](#)
- [The future of medical AI](#)
- [How AI Will Drive The Precision Health Research Revolution Through 2030](#)
- [Big Data y salud: la medicina del futuro](#)
- [Big data y el sector de la salud: el futuro de la sanidad](#)
- [Cómo el 'big data' y la IA pueden mejorar la sostenibilidad del sistema sanitario](#)
- [How Artificial Intelligence Could Change the Fertility World](#)
- [How AI Could Help Doctors Reduce Maternal Mortality](#)
- [The potential of artificial intelligence to bring equity in health care](#)

Healing Patients Through AI

- [Healed through AI](#)
- [Can A.I.-Driven Voice Analysis Help Identify Mental Disorders?](#)
- [Aplicaciones del big data en el sector de la salud](#)
- [Big data en sanidad en España: la oportunidad de una estrategia nacional](#)
- [Cinco proyectos de inteligencia artificial para predecir enfermedades](#)
- [Proyectos de inteligencia artificial, gamificación y home delivery, las nuevas tecnologías al servicio de la salud](#)
- [AI & cancer: Big data, big gains for medicine](#)
- [Artificial Intelligence Enhanced Heart Disease Diagnosis in Ultrasounds](#)
- [How Hospitals are Using AI to Save Lives](#)
- [How big data can save lives: Transforming medical care with machine learning](#)
- [Artificial Intelligence: A New Paradigm in Obstetrics and Gynecology Research and Clinical Practice](#)
- [Why AI for healthcare is critical in Maternal and Child Healthcare](#)
- [Valor Saúde Brasil -Plataforma de governança clínica](#)
- [The National Institute of Mental Health's Dr. Joshua Gordon on AI and Psychology \[Podcast\]](#)

Links We Like #38

Publication Date:
June 15, 2022

Algorithmic Justice: The Next Civil Rights Frontier?

"The first duty of society is justice" - Wendell Phillips

When you think of "civil rights", many things probably come to mind. Generations-long struggles for racial or gender equality and equal protection for other disenfranchised communities are most commonly associated with the phrase. What you do not think of, most likely, are algorithms. In fact, unless they are of special interest or part of your job, you probably don't think much about algorithms at all. In our current digital age, however, this may be a mistake. Algorithms have a significant impact on our lives, in spheres ranging from work to recreation, including what we are shown on our favorite websites (influencing how we view the world). Biased algorithms are also creating new forms of discrimination, impacting the very groups that have previously fought so tirelessly to secure equal rights. To understand how this is happening, we explore what algorithms are, how they can perpetuate biases, and the fight being waged to ensure that this technology does not become a new source of inequality.

What are Algorithms?

Before delving into the impact algorithms have on social justice, it is important to understand what they actually are. The most basic definition is that algorithms are "a plan, or step-by-step instructions on how to solve a problem". They are extremely important to computer science, and act as one of the four "cornerstones" of computational thinking. Basically, algorithms allow computers to transform vast amounts of data into useful information, through a process that involves input, computation, and finally, output. Advancements in Machine Learning (ML) have allowed algorithms to learn from past versions and become more complex (and useful). Taken together, algorithms are instrumental to most of the technology that we use today, both on the personal and societal levels.

Algorithmic Bias

It may seem that algorithms are nothing more than a simple (yet vital) part of the digital ecosystem, helping make our computers work better for us. So how could something so benign be perpetuating biases or even actively harming marginalized groups? The answer actually lies in their ubiquity, as institutions across society increasingly turn to algorithms to streamline operations and advance capabilities. Recent years have brought to light multiple cases of "algorithmic bias", leading to mostly unintentional (though still harmful) discrimination often caused by the data on which algorithms are "trained" on. Real-world examples of the impacts of this type of bias abound. Amazon, one of the world's largest companies, came under fire for an AI-based tool developed to sort through resumes after it was shown to be biased against women. Upon further examination, it was determined that the bias was caused by AI "learning" from the resume data of mostly male applicants (reflecting the gender skew in the tech industry) and subsequently giving males preference to advance to the interview stage. Racial bias has also been shown to be perpetuated by algorithms, manifesting in the form of



lower credit **scores** for Black and other minority borrowers, which can result in higher interest rates or denial of loans. In the medical field, AI-based healthcare scheduling **software** concluded that Black patients were more likely to “no-show” appointments and therefore relegated them to less desirable time slots, leading to 30% longer wait times compared to non-Black patients. In more serious instances, it has been suggested that ML algorithms may be less likely to recommend life-saving treatment **options** to Black patients and have more difficulty identifying dermatological **conditions** on those with darker skin tones. As ML advances, these issues will likely continue to worsen. In fact, Data-Pop Alliance’s own recently published **research** found that ML algorithms applied to earth observation data had a high likelihood of perpetuating gender bias. With equity in employment, financial inclusion, and healthcare at stake, the need to address these biases is clear, leaving only the question of how best to do so.

Algorithmic Justice

The first **steps** in fighting against algorithmic bias involve recognizing that, unlike other forms of discrimination, it is often unintentional, and also that just because data is involved (rather than humans) does not mean neutrality can be assumed. From there, concrete steps can be taken to ensure more equitable design. Recognizing that the datasets from which AI/ML “train” are often biased is vital to finding a solution. Sometimes called “**dirty data**”, these biased samples increase the likelihood of biased algorithms, and should be avoided or compensated for. Luckily **researchers** are working towards both designing tests to determine if bias exists and, if found, developing methods to compensate for it. Algorithmic transparency is another major tool towards achieving fairness. Currently the “**black box**” nature of algorithms makes investigation into their inner workings impossible, leading to calls for open access from affected individuals and even government **regulators**. Government action, such as the UK’s new algorithmic transparency **framework**, will likely play a major role going forward, but like all struggles for equality, a diverse coalition of stakeholders is needed to meet the challenge. Organizations including the **Algorithmic Justice League**, **The Center for Applied Artificial Intelligence**, **Data & Society**, and many others are taking up the mantle and working to make algorithms more transparent, fair, and inclusive. As awareness grows, there is still hope to address these issues now, in the early stages of Fourth Industrial Revolution, before they have the chance to become ingrained and systemic.

Join us in the edition of Links We Like as we explore the topic of algorithmic justice and what the future holds in the fight against digital inequality.

Tackling AI Bias is a Human Problem [Video - TED]

In this insightful TED Talk, Dr. Seth Dobrin, Chief Data Officer for IBM Cloud and Cognitive Services, explores the topic of bias in AI. He begins with a brief overview of the role AI already plays in our societies, impacting us on both an individual and societal scale. He moves on to discussing the enormous effort put into ensuring that his current team of data scientists was as diverse as possible, which resulted in a team composition with twice the diversity of the industry average. Next, he provides an in-depth analysis of how AI bias occurs, using the example of racial bias in mortgage lending that was briefly touched upon in the introduction. One striking aspect of these biases, he emphasizes, is how they are able to evade even strident effort from organizations to account for them, due to a combination of unintentional oversight and the fact that so much data the world has collected has certain biases hidden within. Finally, he outlines recommendations to mitigate algorithmic bias in AI, including the implementation of end-to-end bias detection and increased diversity amongst the human teams overseeing AI projects.

Algorithmic Justice League [Initiative's Website - AJL]

In 2016, MIT Media Lab graduate student, [Joy Buolamwini](#), experienced an upsetting [incident with an algorithm](#) first-hand, when a facial detection software did not recognize her face until she wore a white mask. After this incident Dr. Buolamwini became inspired to draw attention to the prevalence of bias in Artificial Intelligence (AI) and the implications it posed to equal rights. To address these concerns, Dr. Buolamwini founded the Algorithmic Justice League (AJL) in order to raise public awareness regarding the impact and harm of biased AI. As part of their work, the AJL carefully examines how AI systems are developed to prevent harm, relying on [four guiding principles](#): affirmative consent, meaningful transparency, continuous oversight and accountability, and actionable critique. Through a combination of different modalities, including art, research, policy guidance and media advocacy, the Algorithmic Justice League is also raising awareness among the general public and creating a cultural movement that pushes towards the development of equitable and accountable AI.

La justicia algorítmica se impone en Francia [Case Study, in Spanish - RFI]

Una de las principales transformaciones del sistema judicial francés fue la introducción del software [DataJust](#) en los tribunales. Este sistema de inteligencia artificial fue creado por el [decreto no. 2020-356 del 27 de marzo de 2020](#) y permite acceder a datos personales -que en principio han sido anonimizados- para tomar mejores decisiones judiciales. Por esto, el [Consejo de Estado avaló](#) la introducción de DataJust para facilitar la toma de decisiones y específicamente ayudar a definir el monto de las indemnizaciones a las que tienen derecho las víctimas de daños personales. Desde enero de 2022, sin embargo, múltiples organizaciones de derechos humanos y de la sociedad civil han denunciado la violación de la normativa de protección de datos y el marco europeo RGPD. Aunque la mayoría de los datos se encuentran anonimizados, sigue habiendo algunos datos significativos, como fechas de nacimiento o vínculos familiares, cuya visibilidad puede vulnerar los derechos de las víctimas. Por esto, investigadores de asociaciones como [Quadrature du Net](#) han afirmado que el Estado francés se ha desprendido de la protección de datos personales y de la privacidad al permitir el uso de este software.

Race After Technology: Abolitionist Tools for the New Jim Code [Book - By Ruha Benjamin]

Written by [Ruha Benjamin](#), a Professor in the Department of African American Studies at Princeton University, this timely book explores engineered inequality, focusing on racism that is replicated by the digital tools we use in daily life. The author argues that technology and automation entrench racial hierarchies and discrimination while appearing "neutral". Even technologies built specifically to tackle racial bias can end up deepening the discriminatory process. Based on the phrase "[Jim Crow](#)", she defined the "New Jim Code" era as: "the employment of new technologies that reflect and reproduce existing inequities, but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era". The book explores multiple forms of technology and coding, ranging from Polaroid cameras to computer software and invites the reader to question the impact they have on their daily lives. It is recommended reading for everyone who strives for a more equal world free of racism

Algorithms of Oppression [Book - By Safiya Umoja Noble]

The term "google it" has become so natural and unquestioned that we do not take the time to think about how and why search engines display certain results depending on the prompts we give them. In her book, [Algorithms of Oppression](#) [Safiya](#)

Umoja Noble questions the assumed “neutrality” of these results. Noble argues that rather than being neutral, the algorithms used to determine what we see as “search results” are actually part of the systemic structural oppression around race and gender. This oppression is constantly reproduced in the way algorithms are created, often through lack of awareness on the part of engineers, and their refusal to accept their views as biased. Another major issue lies within the “for-profit” business models in which these search engines operate, which leads to users becoming a product to be “sold” to advertisers. This results in an uneven playing field for different forms of ideas and identities, and one in which those with money to pay for online advertising dictate what the public sees. In response to this scenario, Noble proposes a push for more rigorous regulation of search engines and moving away from “the neoliberal capitalist project of commercial search”. Most importantly, she argues that we need to let go of the idea that algorithms and artificial intelligence decision making is inherently neutral.

Further Afield

What is Algorithmic Justice?

- [¿Justicia algorítmica ética?](#)
- [Justicia algorítmica y neuroderecho. Una mirada multidisciplinar.](#)
- [Justicia algorítmica: el sesgo de los algoritmos](#)
- [Reflexionamos sobre la justicia algorítmica. Algorithmic Societies.](#)
- [Justicia algorítmica, educación y el abogado del futuro](#)
- [Injusticia algorítmica](#)
- [Nature: Bias detectives: the researchers striving to make algorithms fair](#)
- [To predict and serve?](#)

Algorithmic Bias

- [Artificial unintelligence](#)
- [Automating inequality](#)
- [Digital Dead End: Fighting for Social Justice in the Information Age](#)
- [Algorithms of oppression](#)

Racism and Sexism in Algorithms

- [Algorithmic Bias, Financial Inclusion, and Gender: A primer on opening up new credit to women in emerging economies](#)
- [Seminario justicia algorítmica en clave de género 2021](#)
- [Why algorithms can be racist and sexist](#)
- [Algorithmic Justice: Race, Bias, and Big Data](#)
- [Twitter: Sharing learnings about our image cropping algorithm](#)

Initiatives Working Towards Algorithmic Justice

- [All tech is human](#)
- [Coded bias](#)
- [Algorithms and Economic Justice: A Taxonomy of Harms and a Path Forward for the Federal Trade Commission](#)
- [AI Algorithms and justice](#)
- [Acción para la justicia algorítmica](#)
- [Presentamos la Guía de Auditoría Algorítmica para desarrollar algoritmos justos y eficaces](#)
- [La Acción por la Justicia Algorítmica está en marcha, manifiesto incluido](#)

Links We Like #39

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August 10, 2022



How AI and Big Data are Reshaping Crime Prevention

Imagine being able to detect crime hotspots in your city, use facial recognition software to match camera footage from a robbery with a database of images, or even predict the likelihood of a crime (including time and location) before it occurs. While this might sound like science fiction ([Minority Report, which came out 20 years ago](#), of course comes to mind), these are just a few current examples of how Big Data and AI are currently being used to fight crime. One of the first uses of these technologies for crime prevention was within the [Los Angeles Police Department](#) in 2010, after they discovered that crime followed similar patterns, much like the aftershocks of an earthquake. Based on this observation, the LAPD developed a mathematical model using crime data to create an algorithm that was able to uncover patterns in the occurrence of crimes. Today, police departments around the world continue to do this, utilizing much more precise and accurate tools, ([predpol](#), [shotspotter](#), [IBM i2 Coplink](#), [Microsoft Azure Data Lake](#) and [Watson Analytics](#)) that learn from large datasets, including police records, surveillance cameras and other sources to predict crime before it happens. These technologies have not only proven effective in predicting property crime, but also in preventing [terrorist attacks](#), and tracking down [sex offenders](#) and [financial criminals](#). Some results have been impressive, as in the [UK](#), where digital crime maps are considered to be 10 times more effective at predicting crime than police officers. In a recently published [book](#) on the subject, there is a summary of the major ways in which Machine Learning is (and will be) used to understand, predict, and perhaps even prevent crime. However, critics of these approaches such as [Catherine O'Neil](#), in her 2016 book "[Weapons of Math Destruction](#)", have raised compelling concerns.

Replicating Discriminatory Patterns?

You may wonder, with such promise and potential for Big Data and AI to revolutionize criminal justice, what's the catch? The answer lies in the various ethical implications that these technologies present, including the potential replication of discrimination. One of the aspects that causes the most concern is the risk that these predictive algorithmic systems will replicate racially-biased outcomes, as they are trained on [historic crime data](#) (which tends to be biased). This could, in turn, cause police officers to congregate in certain "high-crime" areas, leading to more stigmatization (and policing) of the populations living there. This issue gets even more complex when it comes to facial recognition. According to the [National Association for the Advancement of Colored People \(NAACP\)](#), in the USA, Black people are 5 times more likely to be stopped by the police than White people. Additionally, 56% of the incarcerated population are either Black or Latino. These statistics matter because it means that Black and Latino individuals are far more likely to have mugshots and other information stored in police databases, which are then used for cross-referencing with facial recognition data. One frightening consequence of this imbalance includes misidentification, which can lead to wrongful

arrest. According to the [New York Times](#), this exact scenario occurred in 2020 when three Black men were wrongfully arrested after being mistakenly identified by facial recognition software.

Privacy Concerns

In addition to bias replication, facial recognition software also has privacy implications. Companies like [Clearview AI](#), which helps law enforcement agencies with photo-matching, have recently come under scrutiny for their lack of transparency and other security flaws. They operate by collecting [millions of photos](#) taken from social media and other internet sources, without users' consent, and selling them to law enforcement agencies. Despite the common argument that someone who has "nothing to hide" shouldn't mind sharing their data for the "greater good", having personal data at the disposal of companies or police departments can have serious repercussions, including (but not limited to) wrongful identification, unlawful surveillance, and possible security breaches (which happened to [Clearview AI in 2020](#)) that can lead to identity theft. These privacy concerns become even more serious under authoritative regimes, where activists and academics have linked surveillance tools to spyware programs meant to track and target those who oppose the government. An investigation conducted by [The Wall Street Journal](#) discovered that Ugandan intelligence officials used spyware to intercept communications from opposition leader Bobi Wine, providing a real-world example of this kind of repression. Taken together, despite the promises of Big Data and AI to fight crime, the use of these technologies must be carefully evaluated and regulated to protect citizens' physical security and privacy. To achieve this, a [series of measures](#), such as the regulation of surveillance and AI technologies, ethical supervision boards, continuous algorithmic revision, and privacy protection laws must be put into place to ensure that these tools are applied as fairly and ethically as possible.

Join us in the edition of Links We Like as we explore the applications and implications of using Big Data and AI to predict, measure, and fight crime.

Facing the Threat: Big Data and Crime Prevention [Case Study - IBM]

The use of big data and IoT technologies are making investigations easier for police and justice systems. They provide a surveillance system that spots crimes and ensures perpetrators are brought to justice. At the same time, it enables investigators to analyze crime trends as well, which helps police to forecast when and where violent crimes will occur, and ensure that they have the resources in place to prevent them. In [Chicago](#), the use of predictive analytics on crime incidents, arrests, and previous records combined with IoT data is used to detect locations in which crimes flourish by generating a [risk score](#) of about 400,000 arrested persons on a 1-to-500 scale and the evasive action to be taken. The information is further collated and made visible to police in the neighborhood. This predictive model has also gained prominence in [Manchester](#), with that city reporting reductions of 12% in robberies, 21% in burglaries, and 32% in vehicle theft after implementation of the predictive policing model.

Big data: El arma definitiva para prevenir el crimen [Article, in Spanish - H50]

El big data es cada vez más utilizado para mejorar servicios públicos, entre ellos la prevención del crimen. Ante la actual presencia de miles de datos digitales, la [Policía Digital h50](#) explora dos herramientas que permiten potencializar el big data para combatir el crimen. Una de ellas es [PredPol](#) (The Predictive Policing Company) que con base en las denuncias a la policía y los índices de victimización, permite predecir dónde y cuándo es más probable que ocurran los crímenes.

Esto permite una mejor asignación de fuerzas policiales y de recursos, cerrando la brecha de información con datos y reportes. **Beware** es otro sistema que se utiliza en California para predecir la delincuencia con base en datos de redes sociales. Finalmente, h50 resalta la creación por parte de IBM del sistema **Watson**, que ha aprendido el “lenguaje de la ciberseguridad” y es capaz de detectar riesgos y valorar posibles amenazas de ataques cibernéticos. Varios de estos sistemas han sido cuestionados por los desafíos éticos que representan, como el riesgo de **profile** o “encasillar” a ciertos grupos de personas con base en estereotipos. Sin embargo, de lograr superar estos riesgos, estas tecnologías permiten hacer un mayor y mejor uso del big data para potenciar la seguridad.

Parcerias para o combate e prevenção ao crime a partir do uso de Big Data [Article, in Portuguese - Insight Lab]

O uso de Big Data e Inteligência Artificial tem se mostrado promissor no combate e prevenção ao crime nos últimos anos. No Brasil, apesar de muitas iniciativas ainda se encontrarem em fase de desenvolvimento, soluções inovadoras contra o crime construídas a partir do cruzamento de dados já têm sido implementadas com sucesso. Por exemplo, a **Universidade Federal do Ceará** e a **Secretaria de Segurança Pública** do estado desenvolveram **9 projetos** de combate ao crime a partir de 60 fontes de dados ligados à segurança pública. Estes projetos funcionam a partir do uso da linguagem natural, sistema automatizado de busca de impressões digitais e detector de marcas e modelos de veículos a partir de uma ampla base de imagens (entre outras ferramentas), permitindo que policiais e secretarias de combate ao crime consigam identificar criminosos com mais facilidade e rapidez. Soluções semelhantes também podem ser vistas no combate à fraude, um crime que tem crescido exponencialmente com a rápida evolução dos meios de comunicação pela internet. A fim de prevenir cibercrimes, diversas empresas e instituições apostam na utilização de ferramentas de Big Data e Machine Learning para prever possíveis falhas de segurança e calcular o risco de fraude. Um exemplo deste tipo de ferramenta é a plataforma **Konduto**, que analisa o comportamento de navegação e compra do indivíduo para calcular o risco de fraude em uma possível transação bancária virtual.

When Facial Recognition Tech is Wrong [Podcast - Wired’s Gadget Lab]

Technology based on Artificial Intelligence is now being used to identify criminal suspects. In this Wired podcast, the hosts discuss what happens when mistakes are made and things go horribly wrong (for example, the arrest and conviction of an innocent person). Unsurprisingly, those that end up facing the most negative consequences from computer misidentification often belong to vulnerable populations, such as women, Black men and youth. The limitations of facial recognition have repercussions on people’s lives everyday, so go ahead and listen to this episode of “Gadget Lab” for a comprehensive, nuanced, and interesting discussion of the timely topic.

Algorithm Predicts Crime a Week in Advance, but Reveals Bias in Police Response [Project - University of Chicago]

Data and social scientists from the **University of Chicago**, utilizing publicly available data on violent and property crimes, have developed an algorithm to forecast future crimes. By learning from the time and geographical locations revealed by this data, the algorithm can “predict” future crimes one week before they happen, with up to 90% accuracy. The model is able to achieve such remarkable results by isolating crime by looking at the time and spatial coordinates of crime events to detect patterns. Subsequently, the city is divided into 1,000 ft. wide spatial “tiles”, rather than relying on traditional political boundaries, which can be subject to bias.

However, one of the algorithm's creators, Ishanu Chatoopadhyay, PHD cautioned that even though the algorithm achieved such accurate predictive results, it should not be used by law enforcement to "swarm" an area where a crime may occur, but rather as part of the "tool kit" of urban policing.

Further Afield

Big Data and AI for Crime Prevention

- [Computational Approaches to the Study of Corruption](#)
- [Combating crime with Big data, analytics and artificial intelligence](#)
- [Surveillance and Predictive Policing Through AI](#)
- [How big data analytics helps in crime prediction and prevention](#)
- [Big Data e Inteligência Artificial em ação no combate ao crime](#)
- [Big Data e Policiamento Preditivo | BigDataCorp.](#)
- [What Happens When Police Use AI to Predict and Prevent Crime?](#)
- [Using Artificial Intelligence to Address Criminal Justice Needs](#)
- [The Never-ending Quest to Predict Crime Using AI](#)
- [5 Ways Big Data Can Change Crime Prevention](#)
- [Predictive Policing: Big Potential as Big Data Fights Crime](#)
- [¿Se puede combatir el crimen con el Big Data?](#)
- [Luchar contra el crimen con big data](#)
- [Big data y prevención del crimen: en la ficción y en la realidad](#)
- [Automated Justice: Algorithms, Big Data and Criminal Justice Systems](#)

Examples of Big Data and AI as Tools to Fight Crime

- [Using Big Data Analytics to Combat White-Collar Crime](#)
- [This Secret \\$35 Million FBI Unit Mixes Facial Recognition With Big Data To Investigate America's Most Horrific Crimes](#)
- [Socio-economic, built environment, and mobility conditions associated with crime: A study of multiple cities](#)
- [AI predicts crime a week in advance with 90 percent accuracy](#)
- [Aplicativo vai agilizar atendimento policial para vítimas de violência doméstica | Ceara|G1](#)
- [Big Data permite indicar crimes cruzando dados existentes](#)
- [Big data no combate à fraude - Tail Blog](#)
- [Como usar Big Data para barrar fraudes na internet?](#)
- [After Uvalde: Could AI Prevent Another School Shooting?](#)
- [Japanese Municipalities Turn to AI for Crime Prevention](#)
- [The Case for Placing AI at the Center of Digitally Robust Financial Regulation](#)
- [La utilidad del big data para la prevención del crimen](#)
- [El big data como herramienta para la prevención de la delincuencia](#)
- [Security tool guarantees privacy in surveillance footage](#)

Risks of Using Big Data and AI for Crime Prevention

- [Weapons of Math Destruction](#)
- [The danger of predictive algorithms in criminal justice | Hany Farid | TEDxAmoskeagMillyard](#)
- ['An Invisible Cage': How China Is Policing the Future](#)
- [What Data About You Can the Government Get From Big Tech?](#)
- [The Slippery Slope of Big Data in Policing](#)
- [A data 'black hole': Europol ordered to delete vast store of personal data](#)
- [Africa: regulate surveillance technologies and personal data](#)
- [The AI Placed You at the Crime Scene, but You Weren't There](#)
- [Artificial intelligence in criminal justice: invasion or revolution?](#)
- [Researchers use AI to predict crime, biased policing in major U.S. cities like L.A.](#)

Links We Like #40

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September 8, 2022



Engineering the Future? AI Labs Around the World

It seems that we are witnessing significant progress in the development of AI systems and technologies almost daily. Behind the scenes, there are many dedicated organizations, laboratories, and research centers that are working arduously towards finding solutions to pressing issues. There are the well-known big tech giants, whose labs include [Microsoft AI Lab](#), [Google AI](#), [OpenAI](#), [DeepMind](#), [Baidu Research](#), [Tencent AI Lab](#), that are renowned for focusing their efforts towards developing not only AI products that appeal directly to us as customers, but also on research that digs deep into improving the functionality of AI in general. These companies spend massive **amounts of resources** on research and development to create these new technologies. However, there are many more AI research laboratories across the world that are also contributing to investigating new forms, improvements, and ethical guidelines related to AI. A key actor in this endeavor is the academic sector, which is receiving more **funding** to focus on enhancing AI. Top universities across the world have also started research centers which contribute (through publications and research) to a better understanding of AI technologies. These include [Stanford Artificial Intelligence Laboratory](#), [MIT- Watson AI Lab](#), [Artificial Intelligence Laboratory University of Tsukuba](#), [Makerere Artificial Intelligence Lab](#), [UMA AI Lab](#), [UNAM Laboratorio de Inteligencia Artificial y Alta Tecnología](#). Other universities have also created alliances and laboratories, such as the [Alan Turing Institute](#). Given the need for continued research and knowledge production on AI, many independent laboratories have also sprung up and are currently contributing to the field through their work. These laboratories are normally composed of a mix of actors from different fields and sectors that have gathered to bring their expertise. These labs include [AILab One](#), [Midjourney](#), [IA Latam](#), [NAIXUS](#), [AI21Labs](#) and many **others**.

What is AI and Why is AI Research Important?

Why are so many institutions invested in developing research for AI? Why has it become so important? In 1950 Alan Turing asked a very important question that would expand the limits in which humans would utilize machines, which was: **"Can machines think?"**. Based on this simple inquiry, efforts towards creating more advanced and complex machines and systems began. To define it simply, **Artificial Intelligence** is a field in which computer science, machines, and robust datasets are leveraged to enable problem solving systems that mimic the human mind. At its core, **AI systems** are fed information that allows them to perceive environments, make decisions, solve complex problems, imitate patterns, and recognize objects. Using these methods and techniques like **Machine Learning** (ML) and **Deep Learning** (DL), AI systems can facilitate innovative solutions to various real-world problems.

The importance of AI lies in its **intrinsic characteristics**, which allows it to constantly learn on the large amounts of data it is given, and create automated solutions or responses to different problems, including in fields such as **healthcare**, **finance**, **agriculture** and even **art**. Moreover, AI



has proven to **facilitate and automate** many daily tasks humans do and has therefore become an invaluable tool in streamlining many common operations. For this reason, we are seeing an increasing number of companies, academic institutions, government agencies and other sectors getting involved in researching and applying AI in their work. However, AI is not a silver bullet to all of humanity's problems. AI systems raise many ethical considerations and issues with data bias, security, and privacy that affect how the systems perform are also relevant. This is where the importance of research in AI comes in. The research centers focus not only on how to create more innovative AI systems, but also in improving the existing systems and accounting for **ethical issues**, such as data-set biases and privacy concerns. In this research field, the work of **independent researchers and research centers** is extremely important, particularly when **big tech companies** do not seem committed to enacting principles of **Ethical AI**. Therefore, it is crucial to continue on the quest of researching new and different AI systems, their ability to solve problems, and ways they can be improved in accordance with ethical principles.

Join us in this 40th anniversary version of Links We Like, as we discover different AI research laboratories across the world and the work they are doing to create new AI systems and conduct research to improve those that already exist.

Centre for Artificial Intelligence Research (CAIR)

Established in 2011, the Centre for Artificial Intelligence Research is an innovative research network whose objective is to build AI research capacity in South Africa, and with it facilitate broader access to AI technologies and tools in the country. In the Centre, master and doctoral students across six universities in AI AND are trained to produce research through nine established research groups: Adaptive and Cognitive Systems, AI and Cybersecurity, AI for Development, Applications of Machine Learning, Computational Logic, Ethics of AI, Foundations of Machine Learning, Knowledge Representation and Reasoning, and Probabilistic Modeling. CAIR follows a hub-and-spoke model that releases periodic **publications** on topics related to their research group issues, and leads events such as the annual **Southern African Conference for Artificial Intelligence Research**.

Meta AI

Meta AI is the outgrowth of the Facebook Artificial Intelligence Research (FAIR) lab, which was the first of its kind within the organization. The current iteration of the lab is focused on a variety of topics, notably including those dealing with speech and language. One such application, **Builder Bot**, is a part of the "Metaverse", and would allow users to change their virtual surroundings with voice commands. In terms of language, the lab is developing a "**Universal Speech Translator**", which would be capable of instantaneous speech-to-speech translation between over 200 languages. Additionally, its "**No Language Left Behind**" program aims to provide text translation for over 200 languages as well, potentially allowing those who use low-resource languages to both access and share content in their native tongue. Notably, many of the projects under development by the lab are being shared as open-source, with the hopes of allowing others to build upon and improve the applications.

AI Lab One

This AI lab, the first of its kind in The Netherlands, describes its goal as "accelerating the adoption of AI in Dutch society". This lab provides consultation and training for organizations across all sectors, including private companies, governments, and

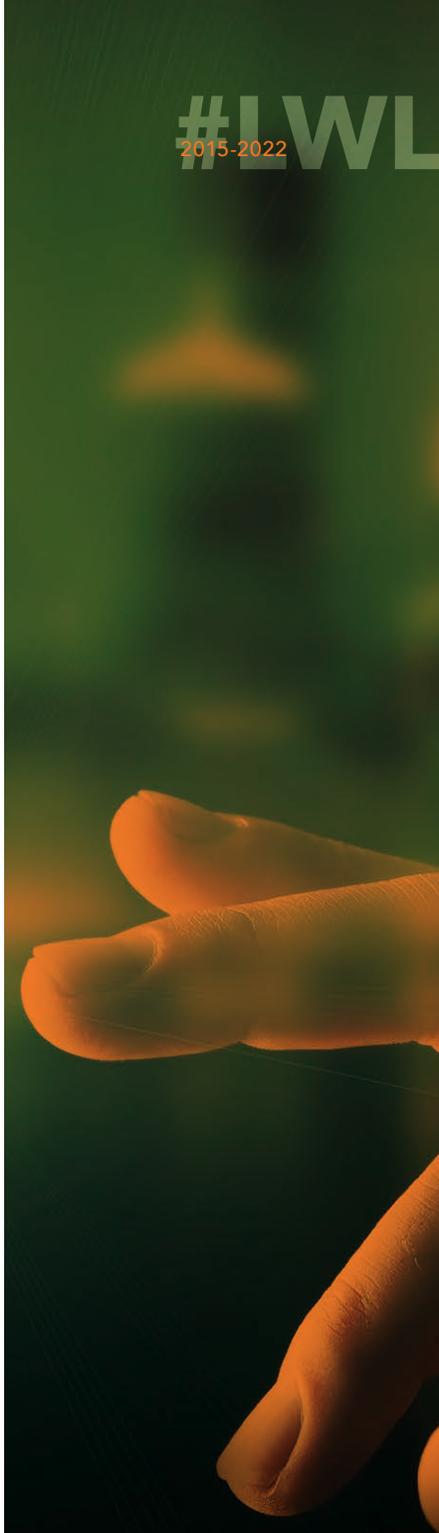
NGOs. A quick look through its website illustrates their many and varied initiatives and projects, including “AI in Healthcare Program”, “Weight Gain Prediction for Pregnant Women”, and “AI for Good Hackathons”. Nonetheless, one initiative that stood out for us is “[The Mothership](#)”, an eighth-week long innovation program for teams and startups aiming to “build a community of individuals and organizations committed to helping vulnerable landscapes around the world”, and thus contribute to reach the UN Sustainable Development Goals. The initiative is co-founded by WorldStartup and Space4Good. It will be interesting to see how this lab evolves and inspires similar projects around the world.

Baidu

Baidu, Inc. is one of the largest AI operations in the world. Co-located in Silicon Valley, Seattle, and Beijing, Baidu Research brings together top talents from around the world and large amounts of R&D spending to focus on future-forward research on AI, which has resulted in Baidu becoming one of the leading AI innovators in the world. From 2018, Baidu is part of an AI ethics group (Partnership on AI (PAI)). Its expertise include among many other topics, including the world’s first large-scale AI model dedicated to aerospace, as well as Digital Human, empowered with disruptive AIGC ability to reach new levels of artistic creation and interactive conversation. Additionally, Kaiwu industrial internet platform, based on Baidu AI Cloud, makes digital transformation possible across industries, and even farming communities. Another product is Apollo RT6, a fully autonomous vehicle that will provide driverless robo-taxi service at half the price of traditional taxis. Baidu also made very important contributions to the control and prevention of COVID-19, including predicting passenger’s body temperature, vaccines design, etc. Last month, Baidu announced its first superconducting quantum computer that fully integrates hardware, software, and applications and the world’s first all-platform quantum hardware-software integration solution that provides access to quantum chips via mobile app, PC, and cloud. Baidu aims to build an open and sustainable quantum ecosystem where “Everyone Can Quantum”.

DeepMind

When the DNA sequence of the human genome was released in 2001, it was hard to imagine that a decades-old problem would be solved 20 years later. This breakthrough could be considered similar in magnitude to the discovery of the Higgs Boson, the verification of gravitational waves, or black holes. This effort, known as AlphaFold, is the most complex AI system from DeepMind, a research lab founded in 2010 and acquired by Google in 2014. But what does it mean to know the 3D structure of proteins? In biology, as in many areas, the structure of something tells us not only about its function, but about its mechanism of action. Inside the cell, proteins are synthesized from the reading and translation of genes. Once synthesized, they adopt a 3D folding that will determine their function. The leap from knowing the DNA sequence of genes and knowing the structure of proteins represented an astronomical advance. The effort to know the structure of a single protein could take years. Generations of doctoral researchers spent 4-5 years predicting such 3D conformations using methods such as crystallography and X-ray diffraction. Today, AlphaFold has reduced that time to seconds or minutes. This year, DeepMind announced the 3D prediction of more than 200 million proteins, representing virtually the entire known protein universe and probably the most important contribution AI has ever made to scientific knowledge, says DeepMind co-founder Demis Hassabis. The database of these predictions and the DeepMind computer code is freely accessible. With this advance, a range of possibilities opens up in the design of disease treatments, better food safety strategies or epidemic control, among many others. This effort



also calls for coordinated work from different fronts regarding human rights, ethics and security. DeepMind's work undoubtedly represents a moment to celebrate.

Further Afield

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