**Algorithms, Unconscious Bias, & AI Additional Research**

Videos:

**Machine Intelligence Makes Human Morals More Important – Zeynep Tufekci TEDx Talks**

<https://www.ted.com/talks/zeynep_tufekci_machine_intelligence_makes_human_morals_more_important?referrer=playlist-the_inherent_bias_in_our_techn>

* Zeynep Tufekci Bio: She is an associate professor at the School of Information and Library Science at the University of North Carolina at Chapel Hill with an affiliate appointment at the Department of Sociology. Tufekci’s research interests revolve around the intersection of technology and society. Her academic work focuses on social movements and civics, privacy and surveillance, and social interaction. She is also increasingly known for her work on "big data" and algorithmic decision making.
* This TEDX is about the complications with more organizations relying on AI when it comes to making ethical decisions. An example of this that Tufekci brings up is companies relying on AI for hiring to make the process less “bias.” She mentions how this is problematic because it gets to a point where we do not know how the system is selecting. The system can find out information that people did not disclose and factor that in the selection process. Tufekci brings up the question how a system can make objective decisions on subjective situations. She mentions how there are hidden biases in the black box algorithms.

**The Era of Blind Faith In Big Data Must End – Cathy O’Neil TEDx**

<https://www.ted.com/talks/cathy_o_neil_the_era_of_blind_faith_in_big_data_must_end>

* This TEDx is gives an overview of the bias issue in algorithms. O’Neil goes on to explain how algorithms are opinions embedded in code, they are not objective. The algorithm is trained to look for people to reach the coders’ (white male) definition of success, this can filter out women because “they do not look like people who are successful in the past.” This is how algorithms repeat the past and injustice.
* Key point: “Data laundering – the act of technologists hiding the ugly truth in black box algorithms and continue to claim the algorithm is objective”
  + Private companies build private algorithms for private results
    - Private power
    - How private institutions make money
* “People are bias. We are injecting biases into the algorithms by choosing what data they should collect, and choose the definition of success for algorithms. We can check algorithms for fairness and fix them – we need to come to terms of the fact on social injustice within the country, we need to think about the definition of success, we need to have algorithms model the blind orchestra auditions.”
  + Auditions take place behind a sheet 🡪 judges look for what is important and ignore what is not important. Then choose on that, not on physical features of the people auditioning.

**Google-backed AI measures gender bias in movies – Published by The Verge**

<https://www.youtube.com/watch?v=jsVZSUIv_iI>

* A Google program, known as GDIQ, currently exists that can detect how much screen time men and women get in films, using voice and object recognition to guess characters’ gender. Studied highest grossings of live action films from 2014 to 2015. According to the program:
  + Women made up 27% of speaking time in the 2015 Oscars winning films
  + Horror is the only genre that women appear more than men
    - Women still have less speaking time than men in genre
* Video begins to question how does GDIQ detect what is female and what is male in film

**Technically Wrong: Sexist Apps, Biased Algorithms – Sara Wachter-Boettcher**

<https://www.youtube.com/watch?v=IG5zU0DdM_4>

* About: How tech companies’ heteronormative assumptions and biases about their users as a marketing tool when building apps can be harmful to users
  + Examples used:
    - Google Maps showing how many calories you burn if you walk to your generation instead of drive. Google maps also compares the calories you would burn into pink mini cupcakes. This is a trigger for people with eating disorders, and promotes diet culture in women (PINK cupcakes)
    - Etsy sent a female user a notification through the app how she needs to hurry up to get a husband a Valentine’s Day gift, but the user does not have a husband, but a wife.
* Companies make tech decision using gender biases, and assume that majority of their users are their idea of “normal” when that may not be the case 🡪 they leave out many of their users with this assumption, and may harm them in some way.

Articles:

**“Justice in the Age of Big Data” by Cathy O’Neil**

<https://ideas.ted.com/justice-in-the-age-of-big-data/>

* This article is about a policing system, PredPol, being used in a small town in Pennsylvania to help police stop crime before it occurs. This system uses algorithms and historical data to give the police a prediction of the time and location of crimes that will occur that day. Other states use programs similar to PredPol (HunchLab, CompStat) to predict locations of future crimes. O’Neil states that these programs mainly target minorities and poor areas. She argues system only focuses on crime mostly occur in neighborhoods in poverty (burglary, homicide, drug dealing, grand theft auto, etc.), making police more drawn to those areas.
* **(OTHER SIDE):** Jeffrey Brantingham, creator of PredPol, argues that system is blind to race and ethnicity. “And PredPol doesn’t focus on the individual — instead, it targets geography. The key inputs are the type and location of each crime and when it occurred. If cops spend more time in the high-risk zones, foiling burglars and car thieves, there’s good reason to believe that the community benefits.” 🡪 Brantingham website explaining his program <http://paleo.sscnet.ucla.edu/>

**“The Perpetual Line-Up: Unregulated Police Face Recognition in America”**

<https://www.perpetuallineup.org/>

* “Across the country, state and local police departments are building their own face recognition. State legislatures and Congress have not passed a single law to comprehensively regulate police use of face recognition—and the Supreme Court has never formally recognized a right to privacy in public. With little to guide them, most—though not all—police departments have not taken adequate steps to rein in this surveillance technology.”
* **(OTHER SIDE OF ARGUMENT):** It has been used to catch violent criminals and fugitives. The law enforcement officers who use the technology are men and women of good faith. They do not want to invade our privacy or create a police state. They are simply using every tool available to protect the people that they are sworn to serve.

**“Silicon Valley Is Inserting Its Biases into Nearly Every Technology We Use” – Stephanie Russell-Kraft**

<https://motherboard.vice.com/en_us/article/pakxby/silicon-valley-is-inserting-its-biases-into-nearly-every-technology-we-use>

* This article is an interview with Sara Wachter-Boettcher explaining the key points of her book*, Technically Wrong…,* and her opinion on Silicon Valley today
  + Key Quotes: “I look at a lot of these biases as microaggressions, the paper cuts of technology. At an individual level it's maybe not a huge deal that this one online form doesn't accept people who don't identify as male or female. But when you look at those over time, they add up…. the other reason the small stuff is important is that the little biases and little failures are red flags for greater abuses. They are visible in ways that a biased algorithm is not visible. If a tech company has paid so little attention to the values of people that it creates an interface that only works if you're straight and cis, or a photo algorithm that only recognizes you if you're white, do you want to trust that algorithm with other aspects of your life? If they cannot make an interface that includes you, do you trust them to make an algorithm that you cannot even see?”

**“New York City Moves to Create Accountability for Algorithms”— Lauren Kirtchner**

<https://www.propublica.org/article/new-york-city-moves-to-create-accountability-for-algorithms>

* “In December 2017, the New York City Council unanimously passed a bill to tackle algorithmic discrimination — the first measure of its kind in the country. The algorithmic accountability bill establishes a task force that will study how city agencies use algorithms to make decisions that affect New Yorkers’ lives, and whether any of the systems appear to discriminate against people based on age, race, religion, gender, sexual orientation or citizenship status. The task force’s report will also explore how to make these decision-making processes understandable to the public. The bill’s sponsor, Council Member James Vacca, said he was inspired by ProPublica’s investigation into racially biased algorithms used to assess the criminal risk of defendants.”
  + Article of ProPublica’s Investigation: “Machine Bias” <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>
  + Second Article on ProPublica’s Investigation (More info) <https://www.propublica.org/article/federal-judge-unseals-new-york-crime-labs-software-for-analyzing-dna-evidence>

**“Want AI to be less biased? Cherish your female programmers” – Anouk Vleugels**  
<https://thenextweb.com/artificial-intelligence/2018/01/11/want-ai-to-be-less-biased-cherish-your-female-programmers/>

* “In an attempt to actively fight unsavory bias in technology, some AI experts proposed we need to implement some sort of AI watchdog; a third party that can investigate claims by people who feel discriminated against by technology. Although an independent initiative, such an organization already exists. The Algorithmic Justice League, founded by Joy Buolamwini, lets users report cases of ‘coded gaze,’ as she calls the phenomenon”
* “Another, more structural solution, would be to have more women working in tech — battling bias in the algorithms by reducing bias in the workplace. Women shouldn’t just to learn how to code but need to be elevated into leadership positions more frequently as well. And we need to do it fast, says AI researcher Fei-Fei Li in this interview with Backchannel: ‘If we don’t get women and people of color at the table — real technologists doing the real work — we will bias systems. Trying to reverse that a decade or two from now will be so much more difficult, if not close to impossible.’”

Research Paper:

**“Automation, Algorithms, and Politics | When the Algorithm Itself is a Racist: Diagnosing Ethical Harm in the Basic Components of Software” – Christian Sandvig, Kevin Hamilton, Karrie Karahalios, Cedric Langbort**

<http://ijoc.org/index.php/ijoc/article/view/6182>

* This is a link to a PDF of a research paper
* Abstract:
  + “Computer algorithms organize and select information across a wide range of applications and industries, from search results to social media. Abuses of power by Internet platforms have led to calls for algorithm transparency and regulation. Algorithms have a particularly problematic history of processing information about race. Yet some analysts have warned that foundational computer algorithms are not useful subjects for ethical or normative analysis due to complexity, secrecy, technical character, or generality. We respond by investigating what it is an analyst needs to know to determine whether the algorithm in a computer system is improper, unethical, or illegal in itself. We argue that an ‘algorithmic ethics’ can analyze a particular published algorithm. We explain the importance of developing a practical algorithmic ethics that addresses virtues, consequences, and norms: We increasingly delegate authority to algorithms, and they are fast becoming obscure but important elements of social structure.”

Books:

**The Black Box Society by Fran Pasquale**

* Summary:
  + “Starting from issues involving digital reputations, Pasquale writes about how the “black boxes” that companies containing personal information can be morphed, queried, and molded in ways that can negatively impact both individuals and groups. Presently, under U.S. law, people don’t own their own data – the data brokers do – and this allows for both inaccuracies and more surveillance. But database-gathered secret information ‘is valuable only if it is exclusive, and it remains exclusive only if the full power of the state can be brought to bear on anyone who discloses it without authorization’” (215)
  + “One of the most important aspects of *The Black Box Society* builds on the work of Siva Vaidhyanathan and others to write about how relying on the algorithms of search impact people’s lives. Through our inability to see how Google, Facebook, Twitter, and other companies display information, it makes it seem like these displays are in some way ‘objective.’ But they are not. Between various stories about blocking pictures of breastfeeding moms, blocking links to competing sites, obscurity sources, and not creating tools to prevent harassment, companies are making choices. As Pasquale puts it: ‘at what point does a platform have to start taking responsibility for what its algorithms go, and how their results are used? These new technologies affect not only how we are understood, but also how we understand. Shouldn’t we know when they’re working for us, against us, or for unseen interests with undisclosed motives?’”
  + More points about his book in a video here:
    - “The Promise (and Threat) of Algorithmic Accountability”— Frank Pasqaule <http://www.lse.ac.uk/website-archive/newsAndMedia/videoAndAudio/channels/publicLecturesAndEvents/player.aspx?id=3350>

Brotopia: Breaking Up the Boys' Club of Silicon Valley by Emily Chang

* Summary:
  + “In this powerful exposé, Bloomberg TV journalist Emily Chang reveals how Silicon Valley got so sexist despite its utopian ideals, why bro culture endures despite decades of companies claiming the moral high ground (Don't Be Evil! Connect the World!)--and how women are finally starting to speak out and fight back.  
    Drawing on her deep network of Silicon Valley insiders, Chang opens the boardroom doors of male-dominated venture capital firms like Kleiner Perkins, the subject of Ellen Pao's high-profile gender discrimination lawsuit, and Sequoia, where a partner once famously said they "won't lower their standards" just to hire women. Interviews with Facebook COO Sheryl Sandberg, YouTube CEO Susan Wojcicki, and former Yahoo! CEO Marissa Mayer--who got their start at Google, where just one in five engineers is a woman--reveal just how hard it is to crack the Silicon Ceiling. And Chang shows how women such as former Uber engineer Susan Fowler, entrepreneur Niniane Wang, and game developer Brianna Wu, have risked their careers and sometimes their lives to pave a way for other women.  
    Silicon Valley's aggressive, misogynistic, work-at-all costs culture has shut women out of the greatest wealth creation in the history of the world. It's time to break up the boys' club. Emily Chang shows us how to fix this toxic culture--to bring down Brotopia, once and for all:” <https://www.amazon.com/Brotopia-Breaking-Boys-Silicon-Valley-ebook/dp/B074LQKJJC/>
  + Short excerpt and key points from Chang’s book:
    - <https://www.bloomberg.com/news/features/2018-02-01/women-once-ruled-computers-when-did-the-valley-become-brotopia>