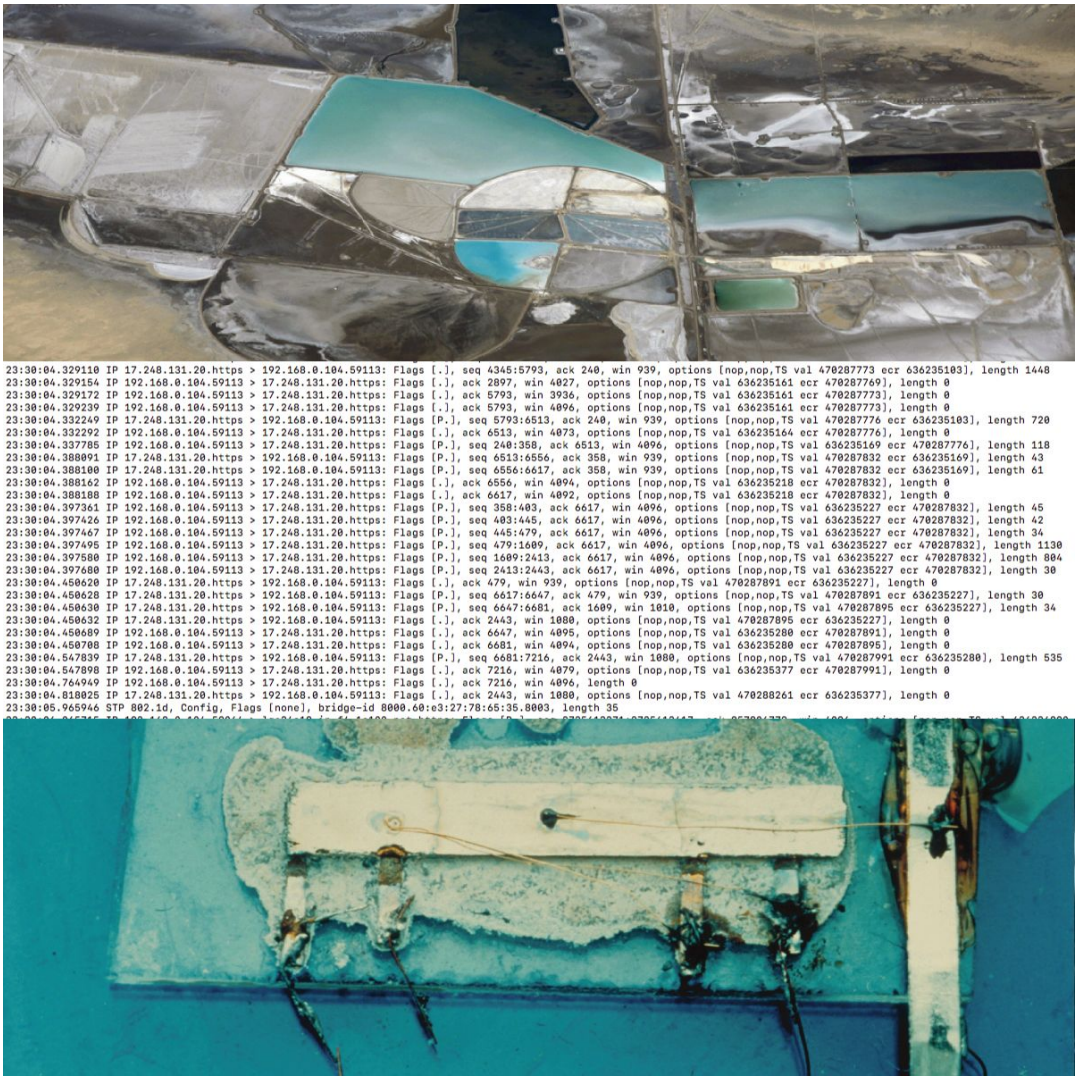
CULT 860: The Politics of Big Data

Wednesdays, 4:30PM–7:10PM, Research Hall 201



CONTACT INFORMATION

INSTRUCTOR	Alexander Monea	EMAIL ADDRESS	amonea@gmu.edu
OFFICE ADDRESS	Robinson B 432	OFFICE HOURS	Wednesdays 3:00PM–4:00PM

COURSE DESCRIPTION

This course will examine the history of big data and the transition from surveillance to dataveillence in contemporary power structures. While we will engage some of the theoretical writing on computational media to gain deeper understandings of code, algorithms, data, and digital media more broadly, the bulk of the course will be dedicated to examining key technologies and techniques of power that leverage big data. These technologies include databases, machine learning algorithms, and distributed or cloud computation. Their applications include

+ demographics, psychometrics, and targeted advertisement
+ surveillance and dataveillance
+ recommendation engines
+ propaganda, fake news, and echo chambers
+ climate modeling
+ predictive policing and recidivism modeling
+ redlining and gerrymandering
+ consumer credit, credit reporting, and predatory lending
+ standardized testing, educational metrics, and child development

The course will close with a unit on big data labor practices like Amazon Mechanical Turk and a unit on how we might resist the power of big data systems.

LEARNING OUTCOMES

By the end of this course, students will have gained the following experiences, skills, knowledge, and practice:

+ Students will be able to articulate what ‘big data’ is.

+ Students will understand the research and development paradigms behind big data systems, and will be able to identify trends in big data approaches to social and economic ‘problems’.

+ Students will be able to locate the stakes in various applications of big data, and particularly locate marginalized communities that are disadvantaged by the cultural biases imported into big data systems.

+ Students will collectively work to develop strong note-taking skills and practice methods for caching as much information from the course readings as possible for easy access/retrieval during future research projects.
+ Students will gain experience crafting a project proposal tailored to a specific call for papers.
+ Students will gain experience crafting and revising a conference or article-length research paper.

REQUIRED TEXTS

Brunton, F & Nissenbaum, H. (2016). *Obfuscation: A User's Guide for Privacy and Protest*. Cambridge, MA: MIT Press. ISBN: 9780262529860 Price: $15.95

Dixon-Román, E. (2017). *Inheriting Possibility: Social Reproduction and Quantification in Education*. Minneapolis, MN: University of Minnesota Press. ISBN: 9781517901264 Price: $28.00

Edwards, P. (2013). *A Vast Machine*. Cambridge, MA: MIT Press. ISBN: 9780262518635 Price: $30.95

Holmes, D. E. (2017). *Big Data: A Very Short Introduction*. New York, NY: Oxford University Press. ISBN: 9780198779575 Price: $9.46

Schneier, B. (2016) *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*. New York, NY: W. W. Norton. ISBN: 9780393352177 Price: $17.95

COURSE ASSIGNMENTS

CRITICAL NOTE-TAKING

We will be explicitly discussing notetaking strategies throughout this course and will be working to collectively document the ideas we encounter. The goal here is for you to not only establish some knowledge of canonical texts, but also to have ready and continued access to that knowledge as you advance your scholarship. As such, we will be working to produce notes that you can reference during future research and writing, specifically so that you can quickly jog your memory about the core points and narrative of any given text and also so that you can drag and drop quotations and references with exact

citations. We will collectively determine in class the best way to accomplish this, what exactly you will be responsible for, and how your grade will be calculated. I will also provide examples of my own notes that we might use as a model.

DEEP DIVE / DOWN THE RABBIT HOLE

You will take a deep dive into the additional materials for one week of the course and perform your own additional research into that week's topic and report back to us on your findings. You will be asked to prepare a written report one week before class discussion and to present your findings for 5-10 minutes during in-class discussion.

I am flexible on what the written report can look like. The goal is to have some synthesis of the research you've conducted. I am imagining something like a white paper, position paper, or literature review that looks at science and technology news as much as it does academic discourse. You may also include things like an annotated bibliography, critical notes for additional resources, etc. Any resources you find that are not already included on the syllabus can be added either by emailing them to me or adding a comment directed to the syllabus in Google Docs.

I would highly recommend picking a deep dive week based on your idea for the final project, as this would be an excellent starting point for your own independent research.

PROJECT PROPOSAL

You will be responsible for developing a well researched, 500-word proposal for your final research project. I expect that these ought to begin as much longer documents that you hone down, fighting to cut every last word out until you've whittled your way down to the maximum word count. In response to that labor, I will provide detailed feedback and offer time for individual conferences to help guide you as you develop your research agendas.

I will be sharing CFPs with you throughout the semester, and I would strongly encourage you to use this assignment to get some feedback on a proposal that you might then revise and submit for potential publication.

FINAL PROJECT

The standard final project for this course is a 5,000 to 7,500-word (references and notes included) research paper that draws on our course readings as well as additional independent research to address an issue, object, concept, problem, method, theory, or practice in big data.

I am open to quantitative projects as well as to artistic, critical making, and digital humanities projects that engage with the course theme of the politics of big data.

The end goal is for you to have a product of some practical utility to you as a scholar. My highest hope would be that we might work together to turn your product into a publication that you can leverage on the job market, or alternately a conference presentation at a national or international conference. As such, I am flexible on the shape of your final project, provided that flexibility affords you a demonstrable opportunity for professional development.

DUE DATES AND DISTRIBUTION

—	Critical Note-Taking	25%
—	Deep Dive / DTRH	25%
04/03	Project Proposal	10%
05/13	Final Project	40%

GRADING SCALE

A−	90–93	**A**	94–96	**A+**	97–100
B−	80–83	**B**	84–86	**B+**	87–89
C−	70–73	**C**	74–76	**C+**	77–79
F	>64	**D**	64–66	**D+**	67–69

COURSE POLICIES

LATE WORK

All assignments must be submitted to me by the provided deadlines. I reserve the right to refuse to accept, grade, and comment on any assignments submitted late. That being said, if you contact me in advance about any problems you are having getting a particular assignment in on time *before the deadline*, I can usually work out an extension for you.

EMAIL POLICY

My response to your emails will not always be immediate. Please budget at least one business day for a response to any given email as a worst case scenario.

Students must use their MasonLive email account to receive important University information, including communications related to this class. It is now a FERPA violation to respond to messages sent from or to send messages to a non-Mason email address.

NON-DISCRIMINATION POLICY

Discrimination on the basis of race, color, religion, national origin, sex, disability, veteran status, sexual orientation, gender identity, age, marital status, pregnancy status or genetic information is a violation of state and federal law, as well as George Mason

University's Non-Discrimination policy, and *will not be tolerated*. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) similarly *will not be tolerated*. Retaliation against any person who complains about discrimination is prohibited.

We will be dealing with complicated and often disconcerting aspects of race, color, religion, sex, disability, sexual orientation, gender identity, age, pregnancy status and genetic information in this course. Students will not be punished for engaging in these themes openly and honestly, so long as they demonstrate a good faith effort towards inclusivity and sensitivity to others.

ACADEMIC INTEGRITY

Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean for this course? Essentially this: when you are responsible for a task, you will perform that task. When you do rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives and traditions. When in doubt (of any kind) please ask for guidance and clarification.

DISABILITY ACCOMMODATIONS

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Services (http://ods.gmu.edu, SUB 1, Room 4205, (703)993-2474) to determine the accommodations that you need; and 2) talk with me to discuss your accommodation needs. It will be no problem to accommodate any of your needs in this class.

COURSE OVERVIEW

WEEK 01: INTRODUCTION TO THE COURSE
WEEK 02: WHAT KIND OF A THING IS BIG DATA? PT. I
WEEK 03: WHAT KIND OF A THING IS BIG DATA? PT. II
WEEK 04: FROM SURVEILLANCE TO DATAVEILLANCE
WEEK 05: SOCIAL DATA & TARGETED ADVERTISING, PT. I
WEEK 06: SOCIAL DATA & TARGETED ADVERTISING, PT. II
WEEK 07: RECOMMENDATION ENGINES
WEEK 08: NO CLASS (SPRING BREAK)
WEEK 09: CLIMATE MODELING
WEEK 10: CRIMINAL JUSTICE
WEEK 11: REDLINING & GERRYMANDERING
WEEK 12: CONSUMER CREDIT
WEEK 13: EDUCATION & CHILDHOOD
WEEK 14: DIGITAL LABOR & AMAZON MECHANICAL TURK
WEEK 15: HOW CAN WE RESIST BIG DATA?

SCHEDULE KEY

 When you see this symbol, click it to view an **Online Resource**.

When you see this symbol, click it to load a **PDF**.

 When you see this symbol, click it to visit **Additional Resources** pages.

1 INTRODUCTION TO THE COURSE

Newspaper & Magazine Articles

- The world's most valuable resource is no longer oil, but data
- Is this AI? We drew you a flowchart to work it out
- What is machine learning? We drew you another flowchart
- It's time to rein in the data barons

Video Lectures

- Cathy O'Neil, "Weapons of Math Destruction," *Talks at Google*
- Cathy O'Neil, "The era of blind faith in big data must end," *TED*

2 WHAT KIND OF A THING IS BIG DATA? PT. I

Book Selections

Gitelman, L. (ed.) (2013). "*Raw Data" is an Oxymoron*. Cambridge, MA: MIT Press. (Introduction & Afterward)

Holmes, D.E. (2017). *Big Data: A Very Short Introduction*. New York, NY: Oxford University Press. (First half)

Academic Articles

boyd, d., & Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological, and scholarly phenomenon. *Information, communication & society*, *15*(5), 662–679.

Elish, M. C., & boyd, d. (2018). Situating methods in the magic of Big Data and AI. *Communication Monographs*, *85*(1), 57–80.

Halevy, A., Norvig, P., & Pereira, F. (2009). The unreasonable effectiveness of data. *IEEE Intelligent Systems*, *24*(2), 8–12.

Case Studies / Examples

- Create a Heat Map of Your Google Location History With This Tool
- Feminist Data Visualization with Catherine D'Ignazio

3 WHAT KIND OF A THING IS BIG DATA? PT. II

Book Selections

Eubanks, V. (2018). *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. New York, NY: St. Martin's Press. (Introduction)

Holmes, D.E. (2017). *Big Data: A Very Short Introduction*. New York, NY: Oxford University Press. (Second half)

Noble, S. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York, NY: NYU Press. (Introduction)

White Papers

- FTC, "Big Data: A Tool for Inclusion or Exclusion? Understanding the Issues"
- Solon Barocas, Alex Rosenblat, danah boyd, Seeta Peña Gangadharan, and Corrine Yu, "Data & Civil Rights: Technology Primer"

4 FROM SURVEILLANCE TO DATAVEILLANCE

Book

Schneier, B. (2016) *Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World*. New York, NY: W. W. Norton.

Newspaper & Magazine Articles

Surveillance Kills Freedom By Killing Experimentation

Podcasts

BBC World Service: Documentary Podcast, "Weapons of Mass Surveillance"

5 SOCIAL DATA & TARGETED ADVERTISING, PT. 1

Academic Articles

Bachrach, Y., Kosinski, M., Graepel, T., Kohli, P., & Stillwell, D. (2012, June). Personality and patterns of Facebook usage. In *Proceedings of the 4th annual ACM web science conference* (pp. 24–32). ACM.

Cheney-Lippold, J. (2011). A new algorithmic identity: Soft biopolitics and the modulation of control. *Theory, Culture & Society, 28*(6), 164–181.

Kosinski, M., Matz, S. C., Gosling, S. D., Popov, V., & Stillwell, D. (2015). Facebook as a research tool for the social sciences: Opportunities, challenges, ethical considerations, and practical guidelines. *American Psychologist*, *70*(6), 543.

Lazarsfeld, P. F., & Merton, R. K. (1948). Mass communication, popular taste and organized social action. *Media studies*, 18-30.

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual review of sociology*, *27*(1), 415-444.

Newspaper & Magazine Articles

- Facebook Is Giving Advertisers Access to Your Shadow Contact Information
- Facebook Privacy Change Is Subject of F.T.C. Inquiry
- With Friends Like These: How your friends, family, and co-workers are secretly helping social networks gather intelligence on you
- Internal emails show Facebook considered selling user data
- Let's Talk About Mark Zuckerberg's Claim that Facebook 'Doesn't Sell Data'

6 SOCIAL DATA & TARGETED ADVERTISING, PT. II

Book Selections

Vaidhyanathan, S. (2017). *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy*. New York, NY: Oxford University Press. (Introduction)

Academic Articles

Gerlitz, C., & Helmond, A. (2013). The like economy: Social buttons and the data-intensive web. *New Media & Society*, *15*(8), 1348–1365.

Newspaper & Magazine Articles

- Albright, "The Graph API: Key Points in the Facebook and Cambridge Analytica Debacle"
- Sauter, "Persuasion and the other thing: A critique of big data methodologies in politics"
- Weapons of Micro Destruction: How Our 'Likes' Hijacked Democracy
- Fake America Great Again

- Iran's New Facebook Trolls Are Using Russia's Playbook
- To Break a Hate-Speech Detection Algorithm, Try 'Love'
- We Tested Facebook's Ad Screeners and Some Were Too Strict
- Why WhatsApp Became a Hotbed for Rumors and Lies in Brazil
- How Political Candidates Know If You're Neurotic
- Study: It only takes a few seconds for bots to spread misinformation

Podcasts

- *The Ezra Klein Show*, "Mark Zuckerberg on Facebook's hardest year, and what comes next"

7 RECOMMENDATION ENGINES

Academic Articles

Covington, P., Adams, J., & Sargin, E. (2016, September). Deep neural networks for YouTube recommendations. In *Proceedings of the 10th ACM Conference on Recommender Systems* (pp. 191-198). ACM.

Ding, Y., Du, Y., Hu, Y., Liu, Z., Wang, L., Ross, K., & Ghose, A. (2011, November). Broadcast yourself: understanding YouTube uploaders. In *Proceedings of the 2011 ACM SIGCOMM conference on Internet measurement conference* (pp. 361-370). ACM.

Hallinan, B., & Striphas, T. (2016). Recommended for you: The Netflix Prize and the production of algorithmic culture. *New Media & Society*, *18*(1), 117-137.

Karakayali, N., Kostem, B., & Galip, I. (2018). Recommendation Systems as Technologies of the Self: Algorithmic Control and the Formation of Music Taste. *Theory, Culture & Society*, *35*(2), 3-24.

Newspaper & Magazine Articles

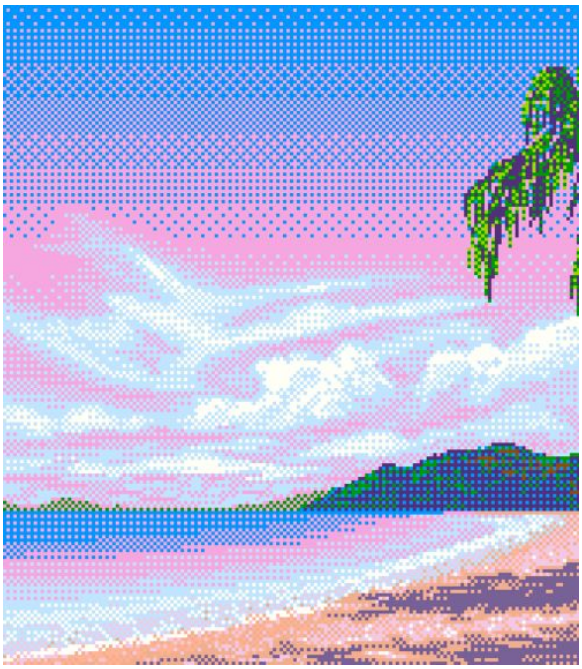
- Up Next: A Better Recommendation System

- How YouTube Recommends Videos
- 'Fiction is outperforming reality': how YouTube's algorithm distorts truth
- YouTube’s A.I. was divisive in the US presidential election
- An ex-Google engineer is scraping YouTube to pop our filter bubbles
- The Next Big Step for AI? Understanding Video

Case Studies / Examples

- AlgoTransparency
- Case Study: Build Your Own Recommendation Engine for Movies
- YouTube-8M Dataset

8 NO CLASS (SPRING BREAK)



9 CLIMATE MODELING

Book

Edwards, P. (2013). *A Vast Machine*. Cambridge, MA: MIT Press.

Case Studies / Examples

- C02GLE
- DEFOOOOOOOOOOOOOOOOOOOOOREST
- Google's Environmental Reports

10 CRIMINAL JUSTICE

Book Selections

Ferguson, A.G. (2017). *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement*. New York, NY: NYU Press. (Introduction)

Academic Articles

Shapiro, A. (Forthcoming). "Predictive Policing for Reform"?: Indeterminacy and Intervention in Big Data Policing. *Surveillance & Society*.

White Papers

- Sarah Brayne, Alex Rosenblat & danah boyd, "Predictive Policing"
- Data & Civil Rights, "Criminal Justice and Civil Rights Primer"
- Alex Rosenblat, Kate Wikelius, danah boyd, Seeta Peña Gangadharan, and Corrine Yu, "Data & Civil Rights: Criminal Justice Primer" (PDF)

Newspaper & Magazine Articles

- ProPublica, “Machine Bias”
- Post Bail – America’s justice system runs on the exchange of money for freedom. Some say that’s unfair. But can data fix it?
- Security News this Week: IBM Made Cops a Tool to Search Surveillance Video by Skin Color

11 REDLINING & GERRYMANDERING

Book Selections

Monmonier, M. (2018). *How to Lie with Maps (3rd Edition)*. Chicago, IL: University of Chicago Press. (Introduction & Chapter 11: Data Maps)

White Papers

- Alex Rosenblat, Kate Wikelius, danah boyd, Seeta Peña Gangadharan, and Corrine Yu, “Data & Civil Rights: Housing Primer”
- Laura Royden, Michael Li, Yurij Rudensky, “Extreme Gerrymandering & the 2018 Midterm: Executive Summary”

Video Lectures

- Richard Rothstein, "The Color of Law," *Talks at Google*

Newspaper & Magazine Articles

- ProPublica, “Facebook (Still) Letting Housing Advertisers Exclude Users by Race”
- This voting reform solves 2 of America’s biggest political problems (WEB)

Podcasts

- *More Perfect*, “Who’s Gerry and Why Is He So Bad at Drawing Maps?”

Planet Money, “Episode 845: REDMAP”

Case Studies / Examples

Acharya, A., Fang, H., & Raghvendra, S. Neighborhood Watch: Using CNNs to Predict Income Brackets from Google Street View Images.

12 CONSUMER CREDIT

Academic Articles

Fourcade, M., & Healy, K. (2013). Classification situations: Life-chances in the neoliberal era. *Accounting, Organizations and Society*, *38*(8), 559-572.

Lauer, J. (2008). From rumor to written record: Credit reporting and the invention of financial identity in nineteenth-century America. *Technology and culture, 49*(2), 301-324.

White Papers

Alex Rosenblat, Rob Randhava, danah boyd, Seeta Peña Gangadharan, and Corrine Yu, “Data & Civil Rights: Consumer Finance Primer”

NCLC, “Big Data, a Big Disappointment for Scoring Consumer Creditworthiness”

Newspaper & Magazine Articles

Apple is quietly giving people 'trust scores' based on their iPhone data

Big Data Underwriting for Payday Loans

How Marketers Use Big Data To Prey On The Poor

The Dangers of High-Tech Profiling, Using Big Data

Podcasts

The Indicator, “China’s Social Credit System”

The Indicator, “China’s Brave New World”

The Indicator, “Life on China’s Blacklist”

Planet Money, “#798: Bad Credit Bureau”

EDUCATION & CHILDHOOD

Book

Dixon-Romàn, E. (2017). *Inheriting Possibility: Social Reproduction and Quantification in Education*. Minneapolis, MN: University of Minnesota Press.

Academic Articles

Lupton, D., & Williamson, B. (2017). The datafied child: The dataveillance of children and implications for their rights. *New Media & Society*, *19*(5), 780-794.

Newspaper & Magazine Articles

Big Data on Campus

ClassDojo: do we really need an app that could make classrooms overly competitive?

White Papers

The Chronicle of Higher Education: The Digital Campus, “Big Data on Campus”

14 DIGITAL LABOR & AMAZON MECHANICAL TURK

Academic Articles

Alkhatib, A., Bernstein, M. S., & Levi, M. (2017, May). Examining crowd work and gig work through the historical lens of piecework. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (pp. 4599-4616). ACM.

Callison-Burch, C. (2014, September). Crowd-workers: Aggregating information across turkers to help them find higher paying work. In *Second AAAI Conference on Human Computation and Crowdsourcing*. AAAI.

Irani, L. (2015). The cultural work of microwork. *New Media & Society, 17*(5), 720-739.

Kim, T. W. (2018). Gamification of Labor and the Charge of Exploitation. *Journal of Business Ethics, 152*(1), 27–39.

Salehi, N., Irani, L. C., Bernstein, M. S., Alkhatib, A., Ogbe, E., & Milland, K. (2015, April). We are dynamo: Overcoming stalling and friction in collective action for crowd workers. In *Proceedings of the 33rd annual ACM conference on human factors in computing systems* (pp. 1621–1630). ACM.

Terranova, T. (2000). Free labor: Producing culture for the digital economy. Social text, 18(2), 33–58.

White Papers

JRC, “The Future of Work in the ‘Sharing Economy’” (Chapter 1: Introduction and Chapter 4: Discussion and Conclusions)

Panos Ipeirotis, “Demographics of Mechanical Turk”

15 HOW CAN WE RESIST BIG DATA?

Book

Brunton, F & Nissenbaum, H. (2016). *Obfuscation: A User's Guide for Privacy and Protest*. Cambridge, MA: MIT Press.

Newspaper & Magazine Articles

- Learn From These Bugs. Don't Let Social Media Zombify You
- Google Tracks You Even If Location History's Off. Here's How to Stop It
- To Control Your Life, Control What You Pay Attention To
- GDPR was just the beginning—the next big fight in data protection is "ePrivacy"
- Establishing an AI code of ethics will be harder than people think
- AI watchdog needed to regulate automated decision-making, say experts
- AI and the Law: Setting the Stage – Berkman Klein Center Collection

Podcasts

- *The Ezra Klein Show*, "Your Attention is Being Hijacked. Chris Bailey can help."