

SAMPLE SYLLABUS

DATA & SOCIETY

Course Description:

This course looks at the ethical issues and policy questions that arise when we make decisions about real world problems using data science, machine learning, and artificial intelligence. We'll look at problems in business, employment, finance, healthcare, education, policing, and other areas. Some of the themes covered include bias, transparency, fairness, and accountability in decision-making. Students will develop fluency reading technical material drawn from a variety of fields, including computer science, ethics, policy, law, media studies, and history.

Assessment:

Reading Responses	5 x 10%
Project Critique	10%
Public Engagement	20%
Media Assignment	20%

Reading Responses:

Write a brief response to the week's readings, to be handed in before class begins. Responses should express what you learned from the readings, any disagreements you have, additional questions you want to ask, and/or corroborating evidence from your own experience.

Project Critique:

Critically assess a proposed data science project. You will be provided with several descriptions of data science projects to choose from. Identify 3 potential problems with the proposed application that could raise concerns with fairness, accountability, or transparency. Write an 800-1000 word paper expressing your concerns and potential remedies.

Public Engagement:

You will be directed to a call for public input into a government initiative involving data science, machine learning, or artificial intelligence. Examine the materials, do some background research, and write a reply to the call that outlines your policy position.

Media Assignment:

In small groups, choose a technical project or policy issue related to the course readings that has a public interest angle, or has been the subject of public debate. Examine the project/issue, identify potential concerns, and produce an opinion piece (article or podcast).

Sample Readings:

Data:

Gitelman and Jackson, *Raw Data is an Oxymoron*
Agre, "Surveillance and Capture: Two Models of Privacy"
Moor, "What is Computer Ethics?"
O'Neil, *On Being a Data Skeptic*

Bias and Discrimination:

Friedman and Nissenbaum, "Bias in Computer Systems"
Lerman, "Big Data and Its Exclusions"

Hardt, “How Big Data Is Unfair”

Dwork and Mulligan, “It’s Not Privacy, and It’s Not Fair”

Valentino-Devries et al., “Websites Vary Prices, Deals Based on Users’ Information”

Auditing Algorithms:

Sandvig, Hamilton, Karahalios, and Langbort, “Auditing Algorithms: Research Methods for Detecting Discrimination on Internet Platforms”

Lavergne & Mullainathan, “Are Emily and Greg more Employable than Lakisha and Jamal?”
Sweeney, “Discrimination in Online Ad Delivery”

Fairness:

Dwork, Hardt, Pitassi, Reingold, and Zemel, “Fairness Through Awareness”

Feldman, Friedler, Moeller, Scheidegger, and Venkatasubramanian, “Certifying and Removing Disparate Impact”

Hardt, Price, and Srebro, “Equality of Opportunity in Supervised Learning”

Lum and Isaac, “To Predict and Serve?”

Barocas, “Data Mining and the Discourse on Discrimination”

Transparency:

Citron and Pasquale, “The Scored Society: Due Process for Automated Predictions”

Ananny and Crawford, “Seeing without Knowing”

Zarsky, “Transparent Predictions”

Crawford and Schultz, “Big Data and Due Process”

Kroll, Huey, Barocas, Felten, Reidenberg, Robinson, and Yu, “Accountable Algorithms”

Bornstein, “Is Artificial Intelligence Permanently Inscrutable?”

Jones, “The Right to a Human in the Loop”

Individuals and Profiles:

Vedder, “KDD: The Challenge to Individualism”

Lippert-Rasmussen, “‘We Are All Different’: Statistical Discrimination and the Right to Be Treated as an Individual”

Schauer, *Profiles, Probabilities, And Stereotypes*

Bolukbasi et al., “Man Is to Computer Programmer as Woman Is to Homemaker?”

Privacy:

Duhigg, “How Companies Learn Your Secrets”

Kosinski, Stillwell, and Graepel, “Private Traits and Attributes Are Predictable from Digital Records of Human Behavior”

Barocas and Nissenbaum, “Big Data’s End Run around Procedural Privacy Protections”

Consumer Protection:

Kochelek, “Data Mining and Antitrust”

Helveston, “Consumer Protection in the Age of Big Data”

Kolata, “New Gene Tests Pose a Threat to Insurers”

Persuasion and Manipulation:

Tufekci, “Engineering the Public”

Calo, “Digital Market Manipulation”

Pariser, “Beware Online ‘Filter Bubbles’”

Surveillance and Policing:

Hasein, “Against Black Inclusion in Facial Recognition”

Agüera y Arcas, Mitchell, and Todorov, “Physiognomy’s New Clothes”

Garvie, Bedoya, and Frankle, *The Perpetual Line-Up*

Wu and Zhang, “Automated Inference on Criminality using Face Images”

Berk et al., “Fairness in Criminal Justice Risk Assessments: The State of the Art”