JANE CASTLEMAN

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Github ⋄ LinkedIn

EDUCATION

Princeton University *Aug 2024 - May 2026*

M.S. in Computer Science

Relevant courses: Theoretical ML; Deep Dive into LLMs; AI, Society, & Education.

Princeton University *Aug 2020 - May 2024*

B.S.E. in Computer Science (*magna cum laude*)

GPA: 3.9/4.0

Minors in Statistics & Machine Learning, Technology Policy.

RESEARCH INTERESTS

My research lies at the intersection of artificial intelligence, human-computer interaction, and technology policy. I work to systematically investigate the adverse impacts of automated systems on user agency and power using algorithmic audits. As these systems become increasingly pervasive and concentrate power, my work seeks to ensure that their deployment aligns with ethical standards and promotes fairness, especially for those in marginalized communities.

PUBLICATIONS

[1] **Jane Castleman** and A. Korolova, "Why Am I Still Seeing This: Measuring the Effectiveness of Ad Controls and Explanations in AI-mediated Ad Targeting Systems," in *7th AAAI Conference on AI, Ethics, and Society*, 2024 (forthcoming). [Online]. Available: http://arxiv.org/abs/2408.11910.

[2] **Jane Castleman**, Y. Ma, A. Defnet, and R. M. Maxwell, "Using XGBoost to Estimate Water Table Depth Over the Contiguous United States using Observational Data.," AGU, Dec. 2022. [Online]. Available: https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1175116.

RESEARCH & WORK EXPERIENCE

Center for Information Technology & Policy Aug 2023 - Present

Supervisors: Professor Aleksandra Korolova Princeton

- Created & executed RCT with >200 participants to create a custom dataset of >8k Facebook ads and ad targeting information
- Found varying effectiveness of ad controls and that ad targeting explanations fail to be actionable due to AI-mediated targeting [1]
- Currently evaluating the alignment of SOTA T2I and search-based LLMs using systematic tests for bias and safety concerns

Ida B. Wells Just Data Lab Jun - Aug 2023

Supervisors: Professor Ruha Benjamin Princeton

- Analyzed employment disparities from >70k rows of BLS data in Python, SQL for formerly incarcerated individuals across 41 occupations
- Quantified monetary losses ranging from $25k to $250k based on duration of licensing barriers
- Presented findings in the Reimagining Labor Justice section of the Civics of Technology Conference

Maxwell Integrated Hydrology Lab Jun - Aug 2022

Supervisors: Professor Reed Maxwell Princeton

- Reduced predicted error for water table depths from 5.2 m to 2.2 m using XGBoost models with observational Xarray data
- Optimized download and ML training on daily coordinate and pixel-based weather data in the US for 2021-2022
- Presented findings at the American Geophysical Union Fall Meeting [2]

TEACHING EXPERIENCE

COS350: Ethics of Computing (Teaching Assistant)	*Fall 2024*
COS126: Introduction to Computer Science (Undergraduate TA)	*Fall 2023, Spring 2024*
COS226: Data Structures & Algorithms (Tutor)	*Fall 2023*
MAT201: Linear Algebra (Tutor)	*Fall 2022, Spring 2023*

ACHIEVEMENTS

Outstanding Student Teaching Award, awarded by Princeton Computer Science	*Spring 2024*
All-Academic Team, awarded by National Intercollegiate Rugby Association	*Fall 2023*

TOOLS/SKILLS

Tools Python (Pandas, Numpy, PyTorch, Tensorflow), Java, SQL, R, C, HTML/CSS
Skills data analysis, probability theory, machine learning, survey development, IRB approval process