Samantha Dalal

Information Science Researcher

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SUMMARY

I focus on Human-AI collaboration, specifically how users navigate and build trust in opaque automated systems. Using mixed methods, I study how workers interact with current algorithmic management and engage in co-design with workers to develop systems that incorporate their expertise and augment their decision making capabilities.

Research Skills
Applied machine learning with scikit-learn, network analysis w/networkx & Gephi, NLP modeling w/BERT, causal inference, data visualization w/seaborn library, large scale data manipulation w/Apache Spark, regression analysis, Python, R, SQL, qualitative interviewing and ethnographic methods, quantitative and statistical analysis, participatory design, prototyping, speculative design, narrative analysis, project management,

EDUCATION

University of Colorado — Boulder, CO
PhD, Information Science — expected graduation August 2025 — 2020 - present
Advisor: Brian Keegan

University of California - Santa Barbara (UCSB) — Santa Barbara, CA
BA, Statistics — 2019
BA, Economics

PROFESSIONAL EXPERIENCE

Black Swan — Lake Forest, CA
Data Science Intern — Jan - July 2020

- ➔ Streamlined consulting team's workflow through developing ETL sentiment analysis & report generation pipeline using Twitter Firehose, PySpark, Gephi, and DataBricks
- ➔ Implemented BERT NLP model for sentiment detection and entity recognition to build graphical representation of Twitter conversations
- ➔ Led internal research on consulting team's work processes and developed tooling to alleviate pain points in work stream

Center for Science and Engineering Partnerships (CESP) - UCSB — Santa Barbara, CA
Data Analytics Intern — Sep 2019 - Mar 2020

- ➔ Implemented web information retrieval with selenium, feature engineering with scikit learn, and data visualization with matplotlib

to analyze labor market outcomes for UCSB STEM scholarship recipients

Genentech
Neighborhood Work Environments (NWE) Intern — San Francisco, CA
Jun - Sep 2018

- ➔ Informed physical workplace design through building and analyzing Google Data Studio Dashboards tracking effects of work environment configuration on worker productivity and efficacy of team collaboration

Research Experience

My research examines the integration of algorithmic systems into the workplace, specifically focusing on how these systems can be designed to preserve human agency and augment, rather than supplement, human decision making. *I utilize mixed methods to inform the subsequent co-design of algorithmic systems alongside those who will be affected by their implementation.*

Making Work "Work"

Explainable AI for Predictive Maintenance — University of Colorado, Boulder
Collaborators: Brian Keegan, Robin Burke, Jessie Smith (CU Boulder) Nikhil Shenoy & Rob Baranowksi (Colvin Run)
Conducted semi-structured interviews to inform development of explainable AI (XAI) maintenance workflow management systems (WMS). Utilized thematic analysis and identification of workers' folk theories. Prototyped wireframes for WMS with XAI interventions that prioritized preserving workers' sense of agency in the workplace.

Critical Infrastructuring on Creative Labor Platforms — University of Colorado, Boulder
Collaborators: Ellen Simpson & Bryan Semann (CU Boulder)
Explored how creators on TikTok must construct their own critical infrastructures to meet community norms around accessibility using an inductive coding approach with interview data. Highlighted the implications of platforms' reliance on creators' critical infrastructures for the political economy of content creation. Paper in submission @ CHI.

Collective Sense-making in Atomized Workforces

Developing Data Narratives with Denver Rideshare Drivers - University of Colorado, Boulder
Collaborators: Colorado Jobs with Justice (JwJ), Colorado Independent Drivers United (CIDU), Drivers Seat Cooperative (DSC)
Conducting a community based research project to understand how technology, in the form of platform data cooperatives, can be used to support worker organizing efforts. Implementing a wage study, demographic survey, and interviews to recount the stories of the rideshare driver community through data they create and own. Project will result in the development of labor organizing materials for drivers.

Gig workers' Development and Propagation of Useful Practices - University of Colorado, Boulder
Collaborators: Drivers Seat Cooperative (DSC)
Utilizing interview data from Data Narratives study to understand how workers attempt to domesticate opaque and erratic algorithmic management practices through developing and sharing useful practices.

Commons & Co-operatives in the Platform Economy

Sustainable Alternatives for Food Delivery - University of Colorado, Boulder
Collaborators: Andrés Monroy-Hernández, Elizabeth Watkins, Nikoo Karbassi, Ngan Chiem (Princeton)
Zheng Yao & Yuhan Li (Carnegie Mellon University)
Conducting interviews with 30+ stakeholders within the food delivery ecosystem to understand the role of technical and value systems in supporting cooperative models of food delivery platforms. In charge of maintaining relationships with community partners, training and supervising undergrad RAs in interviews, and coordinating paper writing processes.

ACADEMIC PUBLICATIONS

Peer-Reviewed Conference Papers

(in submission) Simpson, E., **Dalal, S**. and Semaan, B. "Hey, Can You Add Captions?": Infrastructuring for Accessibility on TikTok. In *Proceedings of 2021 Conference on Human Factors in Computing (CHI)* (2021)

Conference Posters, Talks, Workshop Papers

Dalal, Samantha. Keegan, Brian. Governing the Commons of Platform Labor Data Assets. *Position paper for Civic Technologies: Research, Practice, and Open Challenges Workshop at CSCW '20* https://cscwcivictechnologies.wordpress.com/papers/

Grant Proposals

Dalal, Samantha. Who's Driving the Rideshare Economy: Developing Worker-Centered Data Narratives. Proposal to The University of Colorado Engage Program. 16 April 2021

GRANTS & FELLOWSHIPS

Community Based Research Fellowship ($8,000) - CU Boulder 2021

TEACHING EXPERIENCE

University of Colorado, Boulder Boulder, CO
Graduate Teaching Assistant
- ➔ INFO 1101: Computational Thinking - Intro Python programming class Fall 2020

Guest Lectures
- ➔ INFO 2301: Quantitative Reasoning - Fall 2021
  - ◆ Lecture on cybersecurity & permutations
- ➔ CSCI 7000: Writing for Computer Science - Fall 2021
  - ◆ Lecture on ethical considerations in CS research & citational justice
- ➔ CSCI 7000: Recent Advances in Computer Vision - Fall 2021
  - ◆ Lecture on cybersecurity risks in computer vision research

SERVICE

Peer Reviewing

1 paper reviewed for journals and conferences, including:
ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)

Mentoring

Women in STEM Mentorship Program a UCSB (2017); Department of Information Science incoming students mentor (2021)

Department of Information Science Graduate Student Association

President, 2021-2022
Treasurer, 2020-2021