

EDUCATION

**Massachusetts Inst. of Technology** Feb. 2019 - May 2023  
Advisor: Alex (Sandy) Pentland  
**PhD** in Media Arts and Sciences  
**Title:** *Centering Communities in Research and Technology Design*

**Massachusetts Inst. of Technology** Sep 2016 - May 2018  
Advisor: Alex (Sandy) Pentland  
**M.S. in Media Arts and Sciences**  
Thesis: Network Exploration Effects in Machine & Human Groups

**Northeastern University** Sep 2011 - Dec 2015  
College of Computer and Information Science  
**B.S in Computer Science**  
Minors: Political Science, Sociology  
**Honors:** 3.5/4.0 GPA, Dean's Scholarship, Garnet Award, CCIS Fellow, CCIS Peer Mentor

RESEARCH INTERESTS

**Crowdsourced Algorithmic Auditing**  
Building tools to enable worker- and community-led audits of real-world AI systems.

**Community Data Infrastructure**  
Designing & deploying systems for collective data sharing, governance, and analysis.


**AI, Labor, and Political Economy**  
Studying how AI, including LLMs, reshapes work, wages, regulation, and worker organizing.

**Community Alignment of Generative AI**  
Developing community-led approaches to evaluating and aligning LLMs and generative AI systems.


RELEVANT EXPERIENCE & AFFILIATIONS

 **Penn State University** July 2024 - Present  
Assistant Professor of Information Science and Technology  
Affiliate, Institute for Computational and Data Sciences


 **Princeton University CITP** July 2023 - Present  
Postdoctoral Fellow

 **NASA/JPL** June 2020 - Sep 2020  
Media Artist


- Conceptualized and executed artistic projects investigating the epistemology of scientific research and visualization.
- Created mixed-media artistic outputs including interactive computational art, collage, and academic knowledge.

 **Riff Analytics** June 2018 - Feb 2019  
Cofounder and Chief Research Scientist

- Designed and develop research and product strategies for an A.I. as a service company.
- Led AI and data science pipeline, product architecture, and research designs.
- Developed and co-wrote grant application that led to a successful National Science Foundation SBIR grant.

 **WeClock** June 2020 - Present  
Researcher In Residence

- Design, develop, and deploy worker-centric labor technology.
- Advise on grant applications and applications of technology for advocacy.
- Run and organize workshops with trade union leaders on data visualization, data storytelling, and digital maturity.

 **Level EDU** Sep 2018 - Feb 2019  
Data Analysis Instructor

- Taught, mentored, and supported a cohort of 18 mid-career students in learning data analysis, statistics, and predictive analytics over a 20 week intensive hybrid class.
- Developed and designed custom data science curriculum.
- Nine of 18 students obtained new positions or graduate school acceptance post-program.

## INVITED TALKS & PANELS

***How Algorithms Short-Circuit Occupational Health: Research and Engagement Approaches***

Invited Lecture, CUNY School of Public Health, April 2025

***How iTunes Helped Make Surveillance Wages: Platforms, Personalization, and Wages in the Inference Economy***

Invited Lecture, Penn State Center for Socially Responsible AI, April 2025

***Platforms, Personalization, and Wages in the Inference Economy***

Invited Lecture, Brown University, Introduction to Sociotechnical Systems, April 2025

***Developing tools for crowdsourcing worker data in collaboration with organizers***

Invited Keynote, Workshop on Worker Data Collectives at CSCW, November 2024

***Algorithms as Labor Conditions? Automation, Management, and Activism in the AI Workplace***

Invited talk, Google DeepMind, November 2024

***Why Data Rights Should be Labor Rights: Data Protection and AI Regulation for Gig Workers and Beyond***

Invited talk at Princeton's Center for Information Technology Policy, 2023

***Why Data Rights Should be Labor Rights: Data Protection and AI Regulation at Work***

Price Lab for Digital Humanities, University of Pennsylvania, 2023

***Centering Communities in Research and Technology Design***

Princeton University Digital Investigators Conference, 2023

***Big Data & Society 2023 Colloquium: Data & Social Justice***

2023

***Worker surveillance fireside chat with Veena Dubal, Wilneida Negrón and D Calacci***

Federal Trade Commission, 2023

***Federal Trade Commission PrivacyCon: Why Worker Data Regulation Is About More Than Privacy***

Panel on Commercial Surveillance, 2022

***How to Bargain with a Black Box: Hacking our Way Towards Data-Driven Organizing (Or: a Roadmap for Data-Driven Organizing)***

Hackers On Planet Earth, 2022

***Ring Around the Neighborhood: Spatial Analysis of Doorbell Camera Use***

Pitt Computational Social Science Seminar, 2021

***One Ring To Surveil Them All: Hacking Amazon Ring to Map Neighborhood Surveillance***

Data & Society, 2020

## KEYNOTES

***How to Bargain with a Black Box: Auditing an Algorithmic Pay Change With a Community-Led Audit***

Community Keynote. Fifth Annual ACM FAccT Conference. (2022)

**D Calacci**, Willy Solis, Drew Ambrogi, Vanessa Bain, Danny Spitzberg

## PAPERS (PUBLISHED & UNDER REVIEW)

***Dead Zone of Accountability: Why Social Claims in Machine Learning Research Should Be Articulated and Defended***

*Under Review (2025)*

Tianqi Kou, Cindy Lin, **D Calacci**

## Analyzing Movement and Work Patterns of Fragmented and Dispersed Home Care Workers using Multimodal Data.

Accepted to ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS) (2025)  
Hawi Tolera, **D Calacci**, and Joy Ming

## Rideshare Transparency: Translating Gig Worker Insights on AI Platform Design to Policy

Proceedings of the ACM on Human-Computer Interaction (2025).  
Varun Rao, Samantha Dalal, Eesha Agarwal, **D Calacci**, Andrés Monroy-Hernandez

## QuaLLM: An LLM-based Framework to Extract Quantitative Insights from Online Forums

Proceedings of the 2025 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL) (2025)  
Varun Rao, Eesha Agarwal, Samantha Dalal, **D Calacci**, Andrés Monroy-Hernandez

## FairFare: A Tool for Crowdsourcing Rideshare Data to Empower Organizers

*Under Review (2024)*  
**D Calacci**, Varun Rao, Samantha Dalal, Catherine Di, Kok-Wei Pua, Andrew Schwartz, Danny Spitzberg, Andrés Monroy-Hernandez

## Open e-commerce 1.0, five years of crowdsourced U.S. Amazon purchase histories with user demographics

Nature Scientific Data (2024). <https://doi.org/10.1038/s41597-024-03329-6>  
Alex Berke, **D Calacci**, Robert Mahari, Takahiro Yabe, Kent Larson, and Alex Pentland

## Insights from an experiment crowdsourcing data from thousands of US Amazon users: The importance of transparency, money, and data use

Proceedings of the ACM on Human-Computer Interaction (2024). <https://doi.org/10.1145/3687005>  
Alex Berke, Robert Mahari, Alex (Sandy) Pentland, Kent Larson, **D Calacci**

## As an AI Language Model, “Yes I Would Recommend Calling the Police”: Norm Inconsistency in LLM Decision-Making

Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society (2024). <https://doi.org/10.1609/aies.v7i1.31665>  
Shomik Jain, **D Calacci**, Ashia Wilson

## From Access to Understanding: Collective Data Governance for Workers

European Labor Law Journal (2023). <https://doi.org/10.1177/20319525231167981>  
**D Calacci**, Jake Stein

## Building Dreams Beyond Labor: Worker Autonomy in the Age of AI

ACM Interactions (2023). Accessible at <https://doi.org/10.1145/3626245>  
**D Calacci**

## Privacy Limitations Of Interest-based Advertising On The Web: A Post-mortem Empirical Analysis Of Google's FLoC

ACM Conference on Computer and Communications Security (2022). <https://doi.org/10.1145/3548606.3560626>  
Alex Berke, **D Calacci**

## Bargaining With the Black-Box: Designing and Deploying Worker-Centric Tools to Audit Algorithmic Management

25th ACM Conference on Computer-Supported Cooperative Work (2022). <https://doi.org/10.1145/3570601>  
**D Calacci**, Alex (Sandy) Pentland

## The Cop in Your Neighbor’s Doorbell: Amazon Ring and the Spread of Participatory Mass Surveillance

25th ACM Conference on Computer-Supported Cooperative Work (2022). <https://doi.org/10.1145/3555125>  
**D Calacci**, Jeffrey Shen, Alex (Sandy) Pentland

## Organizing in the End of Employment: Information Sharing, Data Stewardship, and Digital Workerism

2022 Symposium on Human-Computer Interaction for Work 1 (2022): 1-9. <https://doi.org/10.1145/3533406.3533424>

D Calacci

## Mobility patterns are associated with experienced income segregation in large US cities

Nature Communications 12, 4633 (2021). <https://doi.org/10.1038/s41467-021-24899-8>

Esteban Moro, D Calacci, Xiaowen Dong, Alex (Sandy) Pentland

## Leveraging Communication Topologies Between Learning Agents in Deep Reinforcement Learning

AAMAS. pp. 1738-1740. (2020). <https://doi.org/10.48550/arXiv.1902.06740>

Dhaval Adjudah, D Calacci, Abhimanyu Dubey, Anirudh Goyal, P.M. Krafft, Esteban Moro, Alex Pentland

## Patterns of Interaction Predict Social Role in Online Learning

SBP-BRIMS (2018). [https://sbp-brims.org/2018/proceedings/papers/latebreaking\\_papers/LB\\_11.pdf](https://sbp-brims.org/2018/proceedings/papers/latebreaking_papers/LB_11.pdf)

Cici Sun, D Calacci, Alex (Sandy) Pentland

## Rhythm: A unified measurement platform for human organizations

IEEE MultiMedia 25.1 (2018): 26-38. <https://doi.org/10.1109/MMUL.2018.112135958>

Oren Lederman, Akshay Mohan, D Calacci, Alex (Sandy) Pentland

## A frame of mind: Using statistical models for detection of framing and agenda setting campaigns

Proceedings of the 53rd ACL Vol. 1. (2015): 1629-1638.

Oren Tsur, D Calacci, David Lazer

# CONFERENCE TALKS, WORKSHOPS, & POSTERS

## Data & Society Public Tech Leadership Collaborative Salon on Algorithmic Wage Discrimination Workshop / Salon, 2024/2025

**Co-organizer** along with Charley Johnson, Minsu Longiaru, Wilneida Negrón, Aiha Nguyen

## Evaluating Amazon Effects and the Limited Impact of COVID-19 with Purchases Crowdsourced from US Consumers

**Conference Paper, IC252 2025**

Alex Berke, D Calacci, Alex Pentland, Kent Larson

## FairFare: Towards crowdsourced algorithmic inquiry in the gig economy

**Talk.** CSCW Workshop: Back to 'Back to Labor' (2023)

D Calacci, Samantha Dalal, Varun Rao, Danny Spitzberg, and Andrés Monroy-Hernandez

## Fairer Working Futures: Co-Developing a Roadmap For Labor-Centric FAcCT Research

CRAFT **Workshop** Session. Fifth Annual ACM FAcCT Conference. (2022)

D Calacci, Willy Solis, Wilneida Negrón

## One Ring To Surveil Them All: Hacking Amazon Ring to Map Neighborhood Surveillance

**Talk.** Hackers On Planet Earth Conference. (2020)

D Calacci

## Ring Around the Neighborhood: Spatial Analysis of Doorbell Camera Use

**Talk.** 6th International Conference on Computational Social Science. (2020)

D Calacci, Jeffrey Shen, Alex (Sandy) Pentland



### Far-Right Forum Network and LDA analysis

**Poster.** 6th International Conference on Computational Social Science. (2020)

**D Calacci**, Aliah Braley, Dhaval Adjodah, Alex (Sandy) Pentland

### Find My {}: Location Data, Surveillance, and the Commons

**Workshop** Session, Privacy & Security, MozFest. (2019)

**D Calacci**, Becca Ricks, Nasser Eledroos

### The tradeoff between the utility and risk of location data and implications for public good

**Talk.** Connected Life Conference; Oxford/LSE. (2019)

**D Calacci**, Alex Berke, Kent Larson, Alex (Sandy) Pentland

### Economical Segregation of Encounter Networks in Cities

**Talk.** Network Science Society Conference. (2018)

Esteban Moro, **D Calacci**, Xiaowen Dong, Alex (Sandy) Pentland

### Optimizing Inter-Agent Communication Networks for Improved Deep Reinforcement Learning

**Talk.** Network Science Society Conference. (2018)

Dhaval Adjodah, **D Calacci**, Yan Leng, Abhimanyu Dubey, Peter Krafft, Esteban Moro, and Alex 'Sandy' Pentland

### Improved Learning in Evolution Strategies via Sparser Inter-Agent Network Topologies

**Talk.** Thirty-first Conference on Neural Information Processing Systems (NeurIPS). (2017)

Dhaval Adjodah, **D Calacci**, Yan Leng, Peter Krafft, Esteban Moro, and Alex 'Sandy' Pentland

### Exploring inter-group social contact using high-resolution geospatial data

**Talk.** Conference on Complex Systems. (2017)

**D Calacci**, Esteban Moro, Alex (Sandy) Pentland

### Breakout: An Open Measurement and Intervention Tool For Distributed Peer Learning Groups

SBP-BRIMS (2016). [https://sbp-brims.org/2016/proceedings/IN\\_104.pdf](https://sbp-brims.org/2016/proceedings/IN_104.pdf)

**D Calacci**, Oren Lederman, David Shrier, Alex (Sandy) Pentland

### As Long as You Name My Name Right: Social Circles and Social Sentiment in the Hollywood Hearings

Proceedings of the ACL Joint Workshop on Social Dynamics and Personal Attributes in Social Media (2014): 83-87.

**D Calacci**, Oren Tsur, David Lazer

### Automatic Discovery of Partisan Campaigns, Agenda Setting, and Political Spin in Press Releases

**Poster.** Computational Journalism, Columbia, NYC (2015)

Oren Tsur, **D Calacci**, David Lazer

### Separated by a common language? Using topic models in reconstructing networks of political influence and cooperation

**Talk.** Political Networks. (2014)

Oren Tsur, **D Calacci**, David Lazer

### What you know and who you know: discussion networks and political knowledge

**Poster.** Political Networks. (2014)

Katherine Ognyanova, **D Calacci**, David Lazer, Michael Neblo, William Minozzi, Brian Rubineau

## INVOLVED GRANTS

### Submitted

**Gig Work and Health Inequalities: Evidence From the Food Delivery Labor Market**

**National Institutes of Health**

**Total Award Amount:** \$3,391,570.00

**Subaward Amount:** \$253,359.00

**Role:** Co-Author; Co-PI

### Current

**Empowering Delivery Gig Workers with Data and Insights to Improve Health**

**Robert Wood Johnson Foundation Pioneering Ideas**

**Award Amount:** \$250,000.00

**Role:** Co-Investigator

### Completed / Past

**The Worker's Observatory: Crowdsourced tools for Collective Audits of Algorithmic Systems in the Gig Economy**

**Mozilla Technology Fund, 2022**

**Award Amount:** \$50,000.00

**Role:** Grant co-author, engineering lead.

**SBIR Phase I: Positive Effects of Feedback and Intervention for Engagement in Online Learning**

**National Science Foundation. Grant # 1843391**

**Award Amount:** \$223,090.00

**Role:** Grant co-author, data analysis and system development as Co-Founder

**SBIR Phase II: Using Intervention and Feedback to Improve Group Function In Online Contexts**

**National Science Foundation. Grant # 2026003**

**Award Amount:** \$991,417.00

**Role:** Grant co-author, analysis and reporting

### Rejected

**Mapping Language Model Failures through Community Experience:  
A Study of Multilingual Researchers**

**Penn State Center for Socially Responsible AI**

**Total Award Amount:** \$24,587

**Role:** PI

## SELECTED PUBLIC WRITING

***The Gig Workers Who Fought an Algorithm: When Their Pay Suddenly Dropped, Shipt's Delivery Drivers Dug into the Data***

IEEE Spectrum, vol. 61, no. 8, pp. 42-47, Aug 2024

Accessible at <https://perma.cc/NA3X-H4LM>

***Google Needs to Unlock Its Ad Privacy Black Box***

Gizmodo, 2022

Accessible at <https://perma.cc/RQT6-QLSK>

***Location Tracking to Fight Coronavirus is Dangerous and Possibly Pointless***

Gizmodo, 2020

Accessible at <https://perma.cc/BW98-W7MZ>

## SELECTED MEDIA & MENTIONS

***Study: AI could lead to inconsistent outcomes in home surveillance***

Interview, MIT News, 2024

Accessible at <https://perma.cc/8PPG-A4RG>

***Algorithmic wage discrimination: Not just for gig workers***

Interview, The Register, 2024

Accessible at <https://perma.cc/JW4Z-4L3Y>

***Why killer AI is such an alluring horror villain***

Interview, The Washington Post, 2024

Accessible at <https://perma.cc/NJ5A-P5JQ>

***IRL: Online Life is Real Life***

Podcast from Mozilla, 2023.

Accessible at <https://perma.cc/E6UU-P8ZW>

***RadioLab: Gigaverse***

NPR WNYC, 2022. Featured interview in last segment of episode.

Accessible at <https://perma.cc/5SG3-A8C3>

***Mozilla Internet Health Report***

Mozilla, 2022. Podcast.

Accessible at <https://perma.cc/RJ8Y-XK2J>

***Google's FloC flopped, boffins claim, because it failed to provide promised privacy***

The Register, 2022

Accessible at <https://perma.cc/FN9V-YCEK>

***Some Shipt workers report seeing lower pay under new effort-based model***

The Verge, 2020

Accessible at <https://perma.cc/RX2K-E427>

***Shipt's 'Effort-Based' Model Is Cutting Pay for 40% of Workers, Study Shows***

Gizmodo, 2020

Accessible at <https://perma.cc/A4EY-TSYN>

***Ring's Hidden Data Let Us Map Amazon's Sprawling Home Surveillance Network***

Gizmodo, 2019

Accessible at <https://perma.cc/L7QS-34VK>

***The 'Atlas of Inequality' Maps Micro-Level Segregation***

Bloomberg, 2019

Accessible at <https://perma.cc/4L59-44ZS>

***'Atlas Of Inequality' Shows Income Segregation Around Boston***

WBUR, 2019

Accessible at <https://perma.cc/G4WR-S76N>

## TEACHING, MENTORSHIP & SERVICE (interpreted broadly)

### Students & Mentorship

#### PhD Student Advising—Direct Advisor

***Tianqi Kou, Penn State IST***

*Expected Graduation AY '25-26*

***Matt Viana, Penn State IST***

*Expected Graduation AY '28-29*

#### PhD Student Advising—Committee Membership

***Freddy Reiber, University of Victoria***

*Expected Graduation AY '28-29*

***Beta Bartoli, NYU***

*Expected Graduation AY '25-26*

***Ankolika De, Penn State IST***

*Expected Graduation AY '25-26*

#### PhD Student Advising—Mentorship

***Varun Rao, Princeton University***

*Expected Graduation AY '25-26*

***Samantha Dalal, CU Boulder***

*Expected Graduation AY '24-25*

#### Graduated PhD Students (Mentored, Committee, or Advised)

***Alex Berke, MIT (Mentored)***

*Graduated Spring 2025*

*Now works at Google*

#### Student Awards (Mentored, Committee, or Advised)

***Google Policy Fellowship, 2025: Varun Rao (Mentored)***

#### Undergraduate Mentorship & Advising

**Matt Viana, Penn State, '24-25**

**Varun Mani, Penn State, '24-25**

**Eesha Agarwal, Princeton, '23-25**

**Kok-Wei Pua, Princeton, '23-25**

## Courses Taught

### *Fall 2024, Spring 2025: DS 435 Data Ethics*

Required class for Data Science majors on data ethics, AI, and socio-technical considerations related to data science.

## Internal Service

Privacy & Security Hiring Committee, AY 2024-2025

Panelist, Women's History Month in STEM Event (2025)  
Judge, Penn State IDEAMakers Startup Challenge (2025)  
Panelist, LGBTQ+ In Tech (2025)

## External Service

In 2020, I served as a **mentor in the Queer in AI community**, mentoring younger queer students in research and career development.

I have served as a reviewer for:

CHI 2023-25

CSCW 2022-23

SBP-BRiMS 2020

SBP-BRiMS 2021

PLOS-ONE

IC2S2 2022-25

Springer *Nature*

FAcT 2021-25 (AC)

Data & Society

I routinely do volunteer data analysis and rough visualization for journalists without credit. Some notable outlets I have helped in some way include **The New York Times, Reuters, Gizmodo, and the MIT Technology Review.**

From 2018 to 2020, I co-founded and co-hosted a semiannual local art, poetry, and music series in my home in Jamaica Plain, MA.

In the Fall of 2019, I organized and co-hosted a feminist poster-making and performance benefit at the MIT Media Lab following the Epstein scandal.

In 2019 and 2020, I testified at the Massachusetts Statehouse in support of the first A.I. Governance bills to be introduced in the MA state legislature.