ALEX BERKE

http://aberke.com
aberke@mit.edu

EDUCATION

Massachusetts Institute of Technology

2025 PhD, Media Arts and Sciences

2020 MS, Media Arts and Sciences

GPA 5.0/5.0

Thesis: Transforming Digital Traces into Public Goods in the Age of Commercial Surveillance

Committee: Kent Larson, Alex Pentland, Latanya Sweeney

Brown University

2013 BA Mathematics & BA Computer Science

GPA 3.8/4.0

RESEARCH AREAS

Computational social science, privacy, behavioral economics, HCI, sustainability and transportation

PEER REVIEWED ARTICLES

In review A. Berke, D. Calacci, A. Pentland, K. Larson.
New evidence of Amazon effects and the limited impacts of COVID-19.
In review.

A. Berke, K. Larson, A. Pentland, D. Calacci.
Measuring risks inherent to our digital economies using Amazon purchase histories from US consumers.
In review.

2025 A. Berke, B. Ghazi, E. Bacis, P.Kamath, R. Kumar, R. Lassonde, P. Manurangsi, U. Syed.
How Unique is Whose Web Browser? The role of demographics in browser fingerprinting among US users.
Proceedings on Privacy Enhancing Technologies. 2025.

2024 A. Berke, R. Mahari, K. Larson, A. Pentland, D. Calacci.
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 (CSCW). 2024.

A. Berke, D. Calacci, R. Mahari, T. Yabe, K. Larson, A. Pentland.
Open e-commerce 1.0, five years of crowdsourced U.S. Amazon purchase histories with user demographics.
Nature Scientific Data. 2024.

A. Berke, W. Truitt, K Larson.
Is access to public bike-share networks equitable? A multiyear spatial analysis across 5 US Cities.
Journal of Transport Geography. 2024.

2023 A. Berke, G. Ding, C. Chin, K. Gopalakrishnan, K. Larson, H. Balakrishnan, M. Z. Li.
Drone delivery and the value of customer privacy: A discrete choice experiment with U.S. consumers.
Transportation Research Part C: Emerging Technologies. 2023.

A. Berke and K. Larson.
The negative impact of vegetarian and vegan labels: Results from randomized controlled experiments with US consumers.
Appetite. 2023.

2022 A. Berke, R. Doorley, K. Larson, E. Moro.
Generating synthetic mobility data for a realistic population with RNNs to improve utility and privacy.
Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing. 2022.

A. Berke and D. Calacci.
Privacy limitations of interest-based advertising on the web: A post-mortem empirical analysis of Google's FLoC.
Proceedings of the ACM Conference on Computer and Communications Security (CCS'22). 2022.

A. Berke, R. Doorley, L. Alonso, V. Arroyo, M. Pons, K. Larson.
Using mobile phone data to estimate dynamic population changes and improve the understanding of a pandemic: A case study in Andorra.
PLoS ONE. 2022.

A. Berke, R. Doorley, L. Alfonso, K. Larson.
Preserving Sustainability Gains of the COVID-19 Pandemic: A Case Study of MIT Campus Commuting.
Transportation Research Record. 2022.

G. Ding, A. Berke, K. Gopalakrishnan, K. Degue, H. Balakrishnan, M. Z. Li.
Routing with Privacy for Drone Package Delivery Systems.
International Conference on Research in Air Transportation (ICRAT). 2022.
Best paper award.

2021 R. Doorley, A. Berke, A. Noyman, L. Alonso, J. Ribó, V. Arroyo, M. Pons, K. Larson.
Mobility and COVID-19 in Andorra: Country-scale analysis of high-resolution mobility patterns and infection spread.
IEEE Journal of Biomedical and Health Informatics. 2021.

BOOK

2020 A. Berke.
Beautiful Symmetry: A Coloring Book about Math.
MIT Press. 2020. http://beautifulsymmetry.onl

BOOK CHAPTERS

2024 A. Berke and K. Larson.
Mobile phones and their use to study dynamics of COVID-19 pandemic.
Academic Press. 2024.

OPEN DATASETS

2024 A. Berke.
How Unique is Whose Web Browser? Browser attributes and demographics data.
Harvard Dataverse. 2024.

2023 A. Berke, D. Calacci, R. Mahari, T. Yabe, K. Larson, A. Pentland.
Open e-commerce 1.0: Five years of crowdsourced U.S. Amazon purchase histories with user demographics.
Harvard Dataverse. 2023.

POSTERS, EXTENDED ABSTRACTS & PREPRINTS

2024 A. Berke, T. South, R. Mahari, K. Larson, A. Pentland.
zkTax: A Pragmatic Way to Support Zero-Knowledge Tax Disclosures.
Poster in Proceedings of the ACM Conference on Computer and Communications Security (CCS'24). 2024.

2021 A. Berke, N. Lee, P. Chwalek.
Private Delivery Networks
Extended Abstract. Presented at the 3rd Workshop on Obfuscation. 2021.

2020 M. Bakker, A. Berke, M. Groh, A. Pentland, E. Moro.
Effect of social distancing measures in the New York City metropolitan area.
Preprint. 2020.

A. Berke, M. Bakker, P. Vepakomma, K. Larson, A. Pentland.
Assessing disease exposure risk with location data: A proposal for cryptographic preservation of privacy.
Preprint. 2020.

A. Berke and K. Larson.
Contact Tracing Technologies: Methods and trade-offs.
Report. 2020.

2019 D. Calacci, A. Berke, K. Larson, A. Pentland.
The tradeoff between the utility and risk of location data and implications for public good.
Preprint. Presented at the Oxford & London School of Economics Connected Life Conference. 2019.

A. Berke, T. S. Lengeling, J. Nawyn, K. Larson.
Bike Swarm.
ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW). 2019.

PROFESSIONAL ROLES & EXPERIENCE

2017 - present The Brookings Institution. *Nonprofit think tank.*
Nonresident Senior Fellow in The Brookings Metro Program.

2022 - 2024 HackNY. *Nonprofit fellowship program, developing socially responsible tech leaders.*
Board of Directors.

May - Aug 2024 Google. *Google Research & Privacy Sandbox team.*
Student Researcher (Part time, extending internship).

Nov - Feb 2024	Google. *Google Research & Privacy Sandbox team.* Research Intern.
2020 - 2022	Starlings Technology. *Peer-to-peer micromobility technology to improve street safety.* Co-founder and Inventor.
2017 - 2018	Google. *Google Search team, focused on social impact projects within Search.* Software Engineer.
Spring 2017	Pioneer Works. *Artist and scientist-led nonprofit cultural center.* Technology Artist Resident.
2016	Hillary For America. *Campaign headquarters for presidential candidate.* Software Engineer, building data infrastructure.
2014 - 2016	Mast Mobile. *Startup building new mobile network. Technology acquired by Hearsay.* Software Architect and Senior Engineer.
Summer 2014	Blue Ridge Labs. *Social impact innovation lab, co-designing with NYC communities.* Engineering Fellow.
2013 - 2014	Huffington Post Labs Group. *Building innovative tools for journalists and publishing.* Lead Software Engineer.
Summer 2013	Thinkful. *Education technology startup, acquired by Chegg.* Full Stack Developer Intern.

TEACHING AND MENTORSHIP

2022, 2024	*MIT Media Lab City Science course.* Guest lecturer.
2019, 2020, 2022	*MIT Undergraduate Research Opportunities Project (UROP).* Supervised undergraduate researchers.
2015 - 2016	*Common Denominator (previously Top Honors).* Math tutor for NYC public school students (volunteer).
Summer 2014	*HackNY, nonprofit student fellowship program.* Mentor in residence.
Spring 2013	*Brown University, Philip Klein's course in linear algebra for computer science.* Head teaching assistant, managing team of TA's.
Summer 2012	Curriculum writing assistant.
Spring 2012	Teaching assistant.
Spring 2008	*Cambridge Youth Soccer* Head soccer coach for U-12 girls team (volunteer).

ACADEMIC SERVICE

Peer Review	Appetite (2024), Transportation Review Board (2023), MIT Press (2018)
2022	Faculty Search Committee Student Representative. *MIT Media Lab.*
2020	Curriculum co-design with librarians across the US, building on Beautiful Symmetry. *Public Library Innovation Exchange (PLIX).*

Sept 2023 Presented on sustainable catering changes to the MIT Media Lab's operations leaders, at the request of the Media Lab Director. *MIT Media Lab.*

Spring 2019 Co-organized and facilitated discussion series about technologies developed at the Media Lab, with Black Mirror viewings and invited speakers. *MIT Media Lab.*

INVITED TALKS, PANELS, WORKSHOPS

Aug 2025 *MOVES Conference at MoMath, NYC.* Keynote speaker.

Nov 2024 *ACM Conference on Computer Supported Cooperative Work (*CSCW). Insights from an experiment crowdsourcing data from thousands of US Amazon users: The importance of transparency, money, and data use.

Oct 2022 *City Science Summit with The Norman Foster Foundation.* Low-Carbon Diet.

Oct 2022 *MIT Technology Review's ClimateTech Conference.* Low-Carbon Diet.

Apr 2022 *ACM Symposium on Applied Computing.* Generating synthetic mobility data for a realistic population with RNNs to improve utility and privacy.

Apr 2022 *Gathering for Gardner Conference (G4G14).* Mathematical coloring workshop.

May 2021 *3rd Workshop on Obfuscation (virtual).* Private Delivery Networks.

Mar 2021 *The Exploratorium, SF, Member Programs event (virtual).* Invited to lead a puzzle workshop.

Mar 2021 *The Exploratorium, SF, After Dark Online (virtual).* Invited presenter on Fractals.

Feb 2021 *The Julia Robinson Mathematics Festival Problem Incubator (virtual).* Invited presenter.

Jul 2020 *SAI Computing Conference (virtual).* Urban Mobility Swarms: A Scalable Implementation.

Oct 2020 *The MIT Museum (virtual).* Girls Day invited workshop.

Feb 2019 *Rutgers University (invited by Rutgers STEAM).* Math and coloring workshop.

Nov 2019 *ACM Conference on Computer Supported Cooperative Work (*CSCW). Bike Swarm.

Jun 2019 *The Oxford & London School of Economics Connected Life conference.* The tradeoff between the utility and risk of location data and implications for public good.

Jul 2018 *NYC Salon.* Presented "A Mathematical Discussion with Color".

Jun 2018 *New Rochelle's IDEALab.* "Creative Conversation" guest speaker.

Jun 2018 *NYC HTML5.* Technical Talk: Building Art.

Feb 2018 *Creative Coding NYC.* Building Interactive Art on the Web.

Jan 2018 *The Recurse Center.* Mathematical Coloring Workshop and Discussion.

Oct 2017 *Grace Hopper 2017 Conference.* Moderated panel "An Inside Perspective from the Hillary for America Tech Team". Presented 2x due to popularity at the conference.

Jun 2017 *HackNY panel.* On navigating a career in New York City startups.

Feb 2016 *Code Driven NYC.* Balancing consistency and availability in an intelligent phone network.

Jan 2014 *NY Tech Meetup (audience of 800+).* Presented Blogcast Invention.

SELECTED NON-ACADEMIC ARTICLES

Jan 2020 Crypto Voting and US Elections. *Personal blog.*

Feb 2019 Arbitrage and Winning a Cryptocurrency Trading Competition at MIT. *The Celo Blog.*

Dec 2013 Bitcoin Demystified: Security in Decentralization. *The Huffington Post.*

Dec 2013 Bitcoin Demystified: Math vs. Government. *The Huffington Post.*

Nov 2013 My Secret Life as a Bitcoin Miner - Part 1: The Basics. *The Huffington Post.*

ART EXHIBITIONS

Dec - Mar 2019 CityScope with City Science Team. *At Cooper Hewitt, NYC.*

Jun - Jul 2018 Wallpaper. *At Google NYC office.*

May - Jun 2018 Wallpaper, Solo Exhibition. *At Babycastles, an independent gallery and game arcade, NYC.*

May 2017 Second Sundays Community Wallpaper. *At Pioneer Works, NYC.*

SELECTED PRESS

Aug 2023 *National Geographic.* Why don't more people go vegan? It could be the label.

Jul 2023 *BBC Global News Podcast.* Interview about vegan label experiment results.

Jul 2023 *The Times (UK).* Why ditching vegan labels could help the planet.

Aug 2020 *ABC Radio National (Australian public radio).* Beautiful Symmetry (Interview).

Aug 2020 *The Mathematical Association of America.* Review for Beautiful Symmetry: A Coloring Book About Math.

Mar 2020 *The Guardian.* Can you solve it? Are you a master of reflection?

Jan 2020 *US Vote Foundation.* If You Ever Read An Article on Online Voting: Make It This One.

Oct 2017 *Mashable.* The energy at the Grace Hopper Celebration is enough to make you less cynical about tech.

Aug 2014 *Venture Beat.* Can tech help NYC's low-income community? These 5 projects from Significance Labs just may.

Jul 2014 *Forbes.* 3 Lessons For Building Tech for Low-Income Americans.