Piotr Sapiezynski, PhD

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I am an Associate Research Scientist at the Cybersecurity and Privacy Institute at Northeastern University and I focus on fair and socially responsible data science and AI. I audit machine learning models of online platforms to identify potential harms, both individual and societal: privacy leaks, echo chambers, exposure to harmful content, and reinforcement of racist, sexist, and otherwise discriminatory societal structures. Our audits have yielded tangible effects, from financial penalties to legislative change.

Appointments

2020 - present   *Associate Research Scientist*, Northeastern University

2017 - 2020   *Postdoctoral Researcher*, Northeastern University

2016 - 2017   *Postdoctoral Researcher*, Technical University of Denmark

2015   *Visiting* Scholar, Stanford University, hosted by Jure Leskovec

2012   *Visiting* Scholar, Northeastern University, hosted by Alan Mislove and Christo Wilson

2012   *Visiting* Scholar, Northeastern University, hosted by David Lazer

Education

2016   PhD, Computer Science / Data Science, Technical University of Denmark (DTU)

2013   MSc, Digital Media Engineering, Honors Program, Technical University of Denmark (DTU)

2010   BSc, Radio-communication and Multimedia, Warsaw University of Technology

Public Facing Work

- Presented on price differentiation and negative effects of personalization in political advertising at a public hearing to the European Parliament's Internal Market and Consumer Protection Committee

- Briefed Members of US Congress on the House Financial Services Committee as well as the Members of the Consumer Financial Protection Bureau about our auditing work.

- Supervised algorithm audits performed by European NGOs - AlgorithmWatch and Panoptykon - and advised them in the process of proposing changes to the European Digital Services Act.

- Served on Public Health, Surveillance, and Human Rights Network (PHSHRN), organized by Prof. Alondra Nelson. PHSHRN was an international, interdisciplinary group of leaders from industry, civil society, government, and academia that focused on the risks, opportunities, and challenges posed by the public health surveillance during the Covid-19 pandemic.

Selected peer-reviewed publications

- *Measurement and analysis of implied identity in ad delivery optimization,*
  L Kaplan, N Gerzon, A Mislove, **P Sapiezynski**, IMC (2022), Distinguished Long Paper Award

- *Algorithms that "Don't See Color": Comparing Biases in Lookalike and Special Ad Audiences*,
  P Sapiezynski, A Ghosh, L Kaplan, A Mislove, A Rieke, AAAI/ACM AIES (2022), Runner Up Award at ConPro'22

- *All things unequal: Measuring disparity of potentially harmful ads on facebook*,
  M Ali, A Goetzen, A Mislove, E Redmiles, **P Sapiezynski**, ConPro (2022)

- *From Home Base to Swing States: The Evolution of Digital Advertising Strategies during the 2020 US Presidential Primary*,
  NM Brodnax, **P Sapiezynski**, PRQ, (2022)

- *Ad Delivery Algorithms: The Hidden Arbiters of Political Messaging,*
  M Ali*, **P Sapiezynski***, A Korolova, A Mislove, A Rieke, WSDM (2021)
- *Emergence of network effects and predictability in the judicial system,*
  E Mones, **P Sapiezynski**, S Thordal, HP Olsen, S Lehmann, Nature Scientific Reports, (2021)
- *Inferring transportation mode from smartphone sensors: Evaluating the potential of Wi-Fi and Bluetooth,* A Bjerre-Nielsen, K Minor, **P Sapiezynski**, S Lehmann, DD Lassen, PLOS ONE (2020)
- *Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Biased Outcomes,*
  M Ali*, **P Sapiezynski***, M Bogen, A Korolova, A Mislove, A Rieke, CSCW (2019), Honorable Mention Award
- *Interaction Data from the Copenhagen Networks Study,*
  P Sapiezynski, A Stopczynski, DD Lassen, S Lehmann, Nature Scientific Data, (2019)
- *Auditing Offline Data Brokers via Facebook's Advertising Platform,*
  G Venkatadri, **P Sapiezynski**, EM Redmiles, A Mislove, O Goga, M Mazurek, KP Gummadi, WWW (2019)
- *Quantifying the Impact of User Attention on Fair Group Representation in Ranked Lists,*
  P Sapiezynski, W Zeng, RE Robertson, A Mislove, C Wilson, Companion of WWW (2019)
- *Investigating sources of PII used in Facebook's targeted advertising,*
  G Venkatadri, E Lucherini, **P Sapiezynski**, A Mislove, PoPETs (2018)
- *Evidence for a conserved quantity in human mobility,*
  L Alessandretti, **P Sapiezynski**, V Sekara, S Lehmann, A Baronchelli, Nature Human Behavior, (2018)
- *Academic performance and behavioral patterns,*
  V Kassarnig, E Mones, A Bjerre-Nielsen, **P Sapiezynski**, DD Lassen, S Lehmann, EPJ Data Science (2018)
- *Academic performance prediction in a gender-imbalanced environment,*
  P Sapiezynski, V Kassarnig, C Wilson, S Lehmann, A Mislove, FATREC (2017)
- *Inferring Person-to-person Proximity Using WiFi Signals,*
  P Sapiezynski, A Stopczynski, DK Wind, J Leskovec, S Lehmann, IMWUT (2017)
- *Evidence of Complex Contagion of Information in Social Media: An Experiment Using Twitter Bots,*
  B Monsted, **P Sapiezynski**, E Ferrara, S Lehmann, PLOS ONE (2017)
- *Temporal fidelity in dynamic social networks,*
  A Stopczynski, **P Sapiezynski**, A Pentland, S Lehmann, EPJ B (2015)
- *Tracking Human Mobility using WiFi signals,*
  P Sapiezynski, A Stopczynski, R Gatej, S Lehmann, PLOS ONE (2015)
- *Opportunities and Challenges in Crowdsourced Wardriving,*
  P Sapiezynski, R Gatej, A Mislove, S Lehmann, IMC (2015)
- *Measuring large-scale social networks with high resolution,*
  A Stopczynski, V Sekara, **P Sapiezynski**, A Cuttone, MM Madsen, JE Larsen, S Lehmann, PLOS ONE (2014)
- *Measuring personalization of web search,*
  A Hannak, **P Sapiezynski**, AM Kakhki, B Krishnamurthy, D Lazer, A Mislove, C Wilson, WWW (2013)

Selected Press Coverage
- Gizmodo: *Facebook Segments Ads by Race and Age Based on Photos Whether Advertisers Want It or Not, Study Says* (2022)
- ProPublica: *Facebook Finally Agrees to Eliminate Tool That Enabled Discriminatory Advertising* (2022)
- Financial Times: *Time to turn off Facebook's digital fire hose* (2021)

- The Economist: *Facebook's ad system seems to discriminate by race and gender* (2019)
- Washington Post: *Facebook's ad tools subsidize partisanship, research shows. And campaigns may not even know it* (2019)
- WIRED: *How Facebook's Political Ad System Is Designed to Polarize* (2019)
- ProPublica: *Facebook Ads Can Still Discriminate Against Women and Older Workers, Despite a Civil Rights Settlement* (2019)
- Gizmodo: *Facebook Is Giving Advertisers Access to Your Shadow Contact Information* (2018)
- Electronic Frontier Foundation: *You Gave Facebook Your Number For Security. They Used It For Ads* (2018)
- TechCrunch: *Researchers find that Twitter bots can be used for good* (2017)
- The Atlantic: *Apps Don't Need GPS Data to Know Where You Are* (2015)

Awards

Distinguished Paper Award, IMC 2022

Runner Up Award, ConPro 2022

Honorable Mention Award, CSCW 2019

Teaching

Spring 2022	Advanced Topics in Computer Science: Algorithm Auditing, Northeastern University
Spring 2021	Data Science 3000, Northeastern University
Fall 2019	Data Science 2001, Northeastern University
Spring 2019	Data Science 2001, Northeastern University
Fall 2015	Social Graphs and Interactions, TA, Technical University of Denmark
Fall 2014	Social Graphs and Interactions, TA, Technical University of Denmark

Mentorship

- Ioanna Psylla, CEO, co-founder at Mantodea
- Radu Gatej, CTO at BrainCapture
- Wesley Zheng, Software Engineer at YouTube
- Levi Kaplan, now a Graduate Student at Northeastern
- Muhammad Ali, Graduate Student at Northeastern
- Nicole Gerzon, Research Assistant at Northeastern

Program Committee Service

- IC2S2 '23 (Program Chair)
- WWW '22 - '23
- AIES '22
- FAccT '21 - '22
- NetSci '20, '22
- NetSciX '20
- FAccTRec '20 - '21
- IC2S2 '20 - '21
- SocInfo '19
- EAIS '19
- ICWSM '16 - '19
- CompleNet '18

I have also served as an Ethics Reviewer for NeurIPS '21 - '22.