

Arunesh Mathur

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EDUCATION

Ph.D., Computer Science, Princeton University	2016–2020
Dissertation: <i>Identifying and measuring manipulative user interfaces at scale on the web</i> Awarded the 2021 ACM SIGCHI Outstanding Dissertation Award	
M.A., Computer Science, Princeton University	2016–2018
M.S., Human–Computer Interaction (HCI), University of Maryland, College Park	2014–2016
B.Tech., Computer Engineering, National Institute of Technology Karnataka, Surathkal	2008–2012

EMPLOYMENT HISTORY

1. Senior Data Science Manager, Cornerstone Research	2025–now
2. Lead Data Scientist, Competition and Markets Authority (CMA), UK	2021–2025
3. Postdoctoral Research Fellow, Center for Information Technology Policy (CITP)	2020–2021
4. Graduate Student Researcher, Princeton University	2014–2021
5. Senior Member of Technical Staff, Oracle Corporation	2012–2014
6. Research Intern, Microsoft Research	Summer 2011

ACADEMIC PUBLICATIONS

1. Zahra Moti, Asuman Senol, Hamid Bostani, Frederik Zuiderveen Borgesius, Veelasha Moonsamy, Arunesh Mathur, Gunes Acar.
Targeted and Troublesome: Tracking and Advertising on Children’s Websites.
IEEE Symposium on Security and Privacy (S&P) 2024.
2. Arunesh Mathur, Angelina Wang, Carsten Schwemmer, Maia Hamin, Brandon M. Stewart, Arvind Narayanan.
Manipulative tactics are the norm in political emails: Evidence from 300K emails from the 2020 U.S. election cycle.
Big Data & Society 2023.
Select press coverage: The Washington Post, The Guardian, Quartz, The Atlantic, ABC News, Fast Company
3. Noah Apthorpe, Pardis Emami-Naeini, Arunesh Mathur, Marshini Chetty, Nick Feamster
You, Me, and IoT: How Internet-Connected Consumer Devices Affect Interpersonal Relationships.
ACM Transactions on Internet of Things (TOIT) 2022.
4. Kenneth L. Peng, Arunesh Mathur, Arvind Narayanan.
Mitigating dataset harms requires stewardship: Lessons from 1000 papers.
Neural Information Processing Systems Datasets and Benchmarks Track (NeurIPS 2021).
Select press coverage: MIT Technology Review, Nature News
5. Arunesh Mathur, Mihir Kshirsagar, Jonathan Mayer.
What Makes a Dark Pattern...Dark? Design Attributes, Normative Considerations, and Measurement Methods.
ACM Conference on Human Factors in Computing Systems (CHI) 2021.

6. Eyal Peer, Serge Egelman, Marian Harbach, Nathan Malkin, [Arunesh Mathur](#), Alisa Frik.
Nudge Me Right: Personalizing Online Nudges to People's Decision-Making Styles.
Computers in Human Behavior (Volume 109), 2020.
Select press coverage: The Wall Street Journal
7. Arvind Narayanan, [Arunesh Mathur](#), Marshini Chetty, Mihir Kshirsagar.
Dark Patterns: Past, Present, and Future.
ACM Queue, 2020.
8. Michael Swart, Ylana Lopez, [Arunesh Mathur](#), Marshini Chetty.
Is This An Ad?: Automatically Disclosing Online Endorsements On YouTube With AdIntuition.
ACM Conference on Human Factors in Computing Systems (CHI) 2020.
Select press coverage: WIRED
9. Hooman M. Moghaddam, Gunes Acar, [Arunesh Mathur](#), Danny Y. Huang, Ben Burgess, Prateek Mittal, Nick Feamster, Arvind Narayanan, Edward Felten.
Watching You Watch: The Tracking Ecosystem of Over-the-Top TV Streaming Devices.
ACM Conference on Computer and Communications Security (CCS) 2019.
 **Runner up for the Caspar Bowden Award for Outstanding Research in Privacy Enhancing Technologies.**
Select press coverage: WIRED, Financial Times, Fast Company, The Verge, The New York Times, Science Friday, Ars Technica
10. [Arunesh Mathur](#), Gunes Acar, Michael Friedman, Elena Lucherini, Jonathan Mayer, Marshini Chetty, Arvind Narayanan.
Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites.
ACM Computer Supported Collaborative Work and Social Computing (CSCW) 2019.
 **FPF Privacy Papers for Policy Makers Award.**
Select press coverage: The New York Times, The Atlantic, The Guardian, Quartz, The Wall Street Journal, Fast Company, The BBC
11. Frank Li, Lisa Rogers, [Arunesh Mathur](#), Nathan Malkin, Marshini Chetty.
Keepers of the Machines: Examining How System Administrators Manage Software Updates For Multiple Machines.
USENIX Symposium on Usable Privacy and Security (SOUPS) 2019.
 **Distinguished Paper Award.**
12. [Arunesh Mathur](#), Arvind Narayanan, Marshini Chetty.
Endorsements on Social Media: An Empirical Study of Affiliate Marketing Disclosures on YouTube and Pinterest.
ACM Computer Supported Collaborative Work and Social Computing (CSCW) 2018.
 **Best Paper Award.**
Select press coverage: WIRED, The Times, The Verge, The Associated Press
13. [Arunesh Mathur](#), Jessica Vitak, Arvind Narayanan, Marshini Chetty.
Characterizing the Use of Browser-Based Blocking Extensions To Prevent Online Tracking.
USENIX Symposium on Usable Privacy and Security (SOUPS) 2018.
14. [Arunesh Mathur](#), Arvind Narayanan, Marshini Chetty.
An Empirical Study of Affiliate Marketing Disclosures on YouTube and Pinterest.
IEEE Workshop on Technology and Consumer Protection (ConPro) 2018.
15. [Arunesh Mathur](#), Nathan Malkin, Marian Harbach, Eyal Peer, and Serge Egelman.
Quantifying Users' Beliefs about Software Updates.
NDSS Workshop on Usable Security (USEC) 2018.
 **Best Paper, People's Choice.**

16. Noah Apthorpe, Yan Shvartzshnaider, Arunesh Mathur, Dillon Reisman, Nick Feamster.
Discovering IoT Smart Home Privacy Norms using Contextual Integrity.
ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp) 2018.
17. Arunesh Mathur and Marshini Chetty.
Impact of User Characteristics on Attitudes Towards Automatic Mobile Application Updates.
USENIX Symposium On Usable Privacy and Security (SOUPS) 2017.
18. Nathan Malkin, Arunesh Mathur, Marian Harbach, and Serge Egelman.
Personalized Security Messaging: Nudges for Compliance with Browser Warnings.
IEEE European Workshop on Usable Security (EuroUSEC) 2017.
19. Arunesh Mathur, Josefine Engel, Sonam Sobti, Victoria Chang, and Marshini Chetty.
“They Keep Coming Back Like Zombies”: Improving the User Experience of Software Updates.
USENIX Symposium On Usable Privacy and Security (SOUPS) 2016.
20. Arunesh Mathur, Brent Schlotfeldt, and Marshini Chetty.
A Mixed-Methods Study of Mobile Users’ Data Usage Practices in South Africa.
ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp) 2015.
21. Arunesh Mathur, Harshal Choudhary, Priyank Vashist, William Thies, and Santhi Thilagam.
An Empirical Study of License Violations in Open Source Projects.
IEEE Software Engineering Workshop (SEW) 2012.

HONORS AND AWARDS

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| 1. Runner up, Caspar Bowden Award for Outstanding Research in PETS | 2021 |
| 2. ACM SIGCHI Outstanding Dissertation Award | 2020 |
| 3. Consumer Reports Digital Lab fellowship – \$50,000 | 2020 |
| 4. Best paper, USENIX SOUPS 2019 | 2019 |
| 5. Future of Privacy Forum, Privacy Papers for Policy Makers Award | 2019 |
| 6. Best paper, ACM CSCW 2018 | 2018 |
| 7. Best paper people’s choice, USEC 2018 | 2018 |
| 8. USENIX SOUPS travel grant – \$1055 | 2017 |
| 9. ACM CHI Excellent Reviewer | 2021, 2017, 2016 |
| 10. ACM CSCW Excellent Reviewer | 2019 |
| 11. USENIX SOUPS travel grant – \$1195 | 2016 |
| 12. Outstanding Graduate Assistant Award, University of Maryland, College Park | 2015 |
| 13. Dean’s Fellowship, University of Maryland, College Park – \$5000 | 2014 |
| 14. Merit-based Fellowship, University of Maryland, College Park – \$2500 | 2014 |
| 15. Microsoft Research India travel grant – ₹75,000 | 2012 |

TALKS AND PANELS

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| 1. Unravelling the web of manipulative and deceptive user interfaces
Invited Talk, <i>University College London Interaction Centre (UCLIC)</i> | 2021 |
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2. What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods 2021
Invited Talk, *ACM CHI*
3. Identifying and measuring manipulative user interfaces at scale on the web 2021
Invited Talk, *ACM CHI*
4. Dark Patterns: Definitions, Measurement, Policy 2021
Invited Talk, *User Experience Office (UXO) at Princeton University*
5. Dark Patterns: Definitions, Attributes, and Themes 2021
Invited Panelist, *Bringing Dark Patterns to Light: A Federal Trade Commission (FTC) Workshop*
6. Dark Patterns: Definitions, Types, Attributes 2021
Invited Talk, *National Association of Attorneys General*
7. What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods 2021
Invited Panelist, *Roundtable on Dark Commercial Patterns Online by the Organisation for Economic Co-operation and Development (OECD) Committee on Consumer Policy (CCP)*
8. Dark Patterns: Definitions, Measurement, Policy 2020
Invited Talk, *DuckDuckGo*
9. Dark Patterns: Definitions and Policy 2020
Invited Panelist, *Roundtable on Dark Commercial Patterns Online by the Organisation for Economic Co-operation and Development (OECD) Committee on Consumer Policy (CCP)*
10. Consumers and businesses in digital markets - An unequal relationship? 2020
Invited Talk, *Swedish Consumer Agency*
11. Measuring for Consumer Protection at Scale 2020
Invited Panelist, *IEEE Consumer Protection Workshop*
12. Weaponizing Behavioral Psychology in the Cyber Era 2020
Invited Panelist, *Consumer Federation of America*
13. Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites 2020
Invited Panelist, *Privacy Papers for Policymakers, Future of Privacy Forum, Washington, D.C.*
14. Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites 2019
Invited Talk, *ACM CSCW, Austin, TX*
15. Dark Patterns: Definitions, Measurement, Policy 2019
Invited Talk, *Federal Trade Commission (FTC), Washington, D.C.*
16. Endorsements on Social Media: An Empirical Study of Affiliate Marketing Disclosures on YouTube and Pinterest 2018
Invited Talk, *ACM CSCW, Jersey City, NJ*
17. Characterizing the Use of Browser-Based Blocking Extensions to Prevent Online Tracking 2018
Invited Talk, *USENIX SOUPS, Baltimore, MD*
18. An Empirical Study of Affiliate Marketing Disclosures on YouTube and Pinterest 2018
Invited Talk, *IEEE Consumer Protection Workshop, San Francisco, CA*
19. An Introduction to Web Privacy 2018
Invited Talk, *Princeton High School, Princeton, NJ*
20. Impact of User Characteristics on Attitudes Towards Automatic Mobile Application Updates 2017
Invited Talk, *USENIX SOUPS, San Jose, CA*

21. Human–Computer Interaction Research at Princeton University 2017
Invited Talk, *Princeton High School, Princeton, NJ*
22. Improving the User Experience of Software Updates 2016
Invited Talk, *USENIX SOUPS, Denver, CO*
23. A Mixed-Methods Study of Mobile Users’ Data Usage Practices in South Africa 2015
Invited Talk, *ACM UbiComp, Osaka, Japan*
24. A Mixed-Methods Study of Mobile Users’ Data Usage Practices in South Africa 2015
Invited Talk, *32nd Human–Computer Interaction Lab (HCIL) Annual Symposium*
25. An Empirical Study of License Violations in Open Source Projects 2012
Invited Talk, *IEEE Software Engineering Workshop, Heraklion, Greece*
26. OpenZIM: Offline Wikipedia for Low-Cost Phones 2011
Invited Talk, *Software Freedom Day, NITK, Surathkal*

SERVICE

1. Co-organizer, ACM CHI Workshop “What Can CHI Do About Dark Patterns?” 2021
2. Program Committee, USENIX Security 2023, 2022
3. Program Committee, IEEE ConPro Workshop 2022, 2021
4. Reviewer, ACM TOCHI 2021
5. Reviewer, ACM CHI 2022, 2021, 2018, 2017, 2016, 2015
6. Reviewer, PETS 2022, 2021, 2019, 2018
7. Reviewer, ACM CSCW 2021, 2019, 2018
8. Webmaster, IEEE ConPro Workshop 2020
9. Reviewer, Journal of Cybersecurity 2019
10. Program Committee, IEEE EuroUSEC Workshop 2019
11. Reviewer, USENIX SOUPS 2018
12. Poster Jury, USENIX SOUPS 2018
13. Program Committee, ACM CHI Workshop on Individual Differences in Privacy 2018
14. Program Committee, ACM CHI Late Breaking Work (LBW) 2018
15. Reviewer, ACM IMWUT 2017
16. Reviewer, ACM UbiComp 2015
17. Student Volunteer, WEIS 2016
18. Student Volunteer, ACM UbiComp 2015
19. Webmaster and Publicity Chair, ACM DEV–5 2014