Ariana Mirian

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Researcher with over six years' of experience working with real-world, large-scale datasets to empirically quantify and improve security posture by examining end-user needs and behaviors. Excited to collaborate with others and execute data-driven projects to shape user experiences and drive strategy.

EDUCATION

University of California – San Diego (UCSD)   June 2023
Doctor of Philosophy (Ph.D.), Computer Science and Engineering
Thesis: Prioritizing Security Practices via Large-Scale Measurement of User Behavior

University of Michigan – Ann Arbor   May 2016
Bachelor of Science in Engineering (B.S.E), Computer Science and Engineering

WORK EXPERIENCE

UCSD IT Security team, Researcher   2021 – Present
                                                                                         San Diego, CA
- Partnered with IT employees across teams to develop research projects that improved organizational safety; prioritized projects based on organizational needs
- Improved patch rate of organizational vulnerabilities from 3% to 78% using active experimentation, strategic planning, and empirical analysis of real-world data
- Further quantified organizational patching difficulties with expert interviews
- Spurred organizational protocol changes in campus-wide communications via behavioral analysis about user responses to communications
- Created and executed active experiments to lower phishing rate by improving phishing training/simulations within the organization
- Identified lack of relationship between yearly security training and security outcomes using passive analysis of real-world data, which prompted an investigation into best methods for lowering security outcomes
- Communicated oral and verbal results to stakeholders ranging from technical managers to c-suite level executives

UCSD Graduate Student Researcher   2016 – 2023
Advisors: Stefan Savage and Geoffrey M. Voelker   San Diego, CA
- Directed 8 research projects from ideation to analysis to publication
- Created and managed multiple large data-collection systems in Python, C, and Bro
- Utilized log analysis to understand how behaviors relate to security outcomes
- Initiated and executed relationships with industry partners and other research labs, both within UCSD and outside of the organization

Google, Chrome Metrics   Summer 2018
Mentors: Nik Bhagat, Caitlin Sadowski, Adrienne Porter Felt   Sunnyvale, CA
- Created internal tool that assisted teams with data-driven deprecation decisions
- Identified different categories of deprecation using qualitative coding; created programmatic decision making pipeline based on categorizations

Google, Chrome Security   Summer 2017
Mentors: Adrienne Porter Felt, Emily Stark   Sunnyvale, CA
- Analyzed less popular sites to determine HTTPS blockers; identified websites that could be targeted for direct outreach, and helped inform team strategy
- Modified Pshtt (open source tool) to be more robust for internal and external use

TECHNOLOGIES AND SKILLS

- Experienced at working in ambiguous research science role within a security operations team and managing multiple projects independently
- Skilled at determining best research method for the situation and creating data driven insights
- Proficient in Python, SQL, Pandas, data visualizations; competent at Splunk, R
- Adept at adopting and maintaining large code bases
- Skilled in hypothesis testing, statistical/ML methods (e.g. causal inferencing, power analyses, regressions, predictive modeling), and Internet measurement methods
- Ability to communicate research findings to different stakeholders in verbal and written forms; proficient at publishing in top-tier research venues

RELEVANT PUBLICATIONS

Refer to arianamirian.com for full list of publications

Please Act Now: An Empirical Analysis of Enterprise-wide Mandatory Password Updates
Ariana Mirian, Grant Ho, Stefan Savage, Geoffrey M. Voelker
  In Submission

In the Line of Fire: Risks of DPI-triggered Data Collection
Ariana Mirian, Alisha Ukani, Ian Foster, Gautam Akiwate, Taner Halicioglu, Cindy Moore,
  Alex C. Snoeren, Geoffrey M. Voelker, Stefan Savage
  Cybersecurity Test and Experimentation Workshop, Marina Del Rey, United States, August 2023

Hack for Hire: Exploring the Emerging Market for Account Hijacking
  Ariana Mirian, Joe DeBlasio, Stefan Savage, Geoffrey M. Voelker, Kurt Thomas
  The Web Conference, San Francisco, United States, May 2019

Measuring Security Practices and How They Impact Security
  Louis DeKoven, Audrey Randall, Ariana Mirian, Gautam Akiwate, Ansel Blume, Lawrence K. Saul, Aaron
    Schulman, Geoffrey M. Voelker, Stefan Savage
  19th Internet Measurement Conference (IMC), Amsterdam, Netherlands, October 2019

LEADERSHIP & ACTIVITIES

CSE Diversity, Equity, and Inclusion Committee, UC San Diego   2018 – 2021
Co-lead and Member
- Created and led department committee focused on DEI initiatives
- Co-ordinated and empowered launch of several initiatives, such as: student committee for equitable PhD admissions to CSE department, internal focus groups to determine culture issues in different populations, speaker series

Graduate Women in Computing (GradWIC), UC San Diego   2016 - 2020
President
- Acted as main contact for industries, organizations, and the University
- Planned strategy for upcoming years for goals and measurements of success
- Launched and lead mentorship program in Fall 2017; created infrastructure
- Doubled membership body and tripled number of events hosted