Eric Zeng

Postdoctoral Research Associate
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Research Interests

- Usable security and privacy
- Auditing online tracking and targeted online advertising
- Assisting security and privacy decisions with AI
- Countering deceptive patterns and misinformation

Education

University of Washington, Seattle, WA

Ph.D., Computer Science & Engineering — June 2022
Advisor: Prof. Franziska Roesner
Thesis: Characterizing and Measuring "Bad Ads" on the Web

M.S., Computer Science & Engineering — June 2016

B.S., Computer Engineering — June 2015
Minor, Political Science

Publications

Attributions for ML-based ICS Anomaly Detection: From Theory to Practice

Clement Fung, **Eric Zeng**, Lujo Bauer
Network and Distributed System Security Symposium (2024, to appear)

Towards Usable Security Analysis Tools for Trigger-Action Programming

McKenna McCall, **Eric Zeng**, Faysal Hossain Shezan, Mitchell Yang, Lujo Bauer, Abhishek Bichhawat, Camille Cobb, Limin Jia, Yuan Tian
Symposium On Usable Privacy and Security (2023)

What Factors Affect Targeting and Bids in Online Advertising? A Field Measurement Study

Eric Zeng, Rachel McAmis, Tadayoshi Kohno, Franziska Roesner
ACM Internet Measurement Conference (2022)

Anti-Privacy and Anti-Security Advice on TikTok: Case Studies of Technology-Enabled Surveillance and Control in Intimate Partner and Parent-Child Relationships

Miranda Wei, **Eric Zeng**, Tadayoshi Kohno, Franziska Roesner
Symposium on Usable Privacy and Security (2022)

Polls, Clickbait, and Commemorative $2 Bills: Problematic Political Advertising on News and Media Websites Around the 2020 U.S. Elections

Eric Zeng, Miranda Wei, Theo Gregersen, Tadayoshi Kohno, Franziska Roesner
ACM Internet Measurement Conference (2021)

Runner-up for Best Paper Award

What Makes a “Bad Ad”? User Perceptions of Problematic Online Advertising
Eric Zeng, Tadayoshi Kohno, Franziska Roesner
ACM CHI Conference on Human Factors in Computing Systems (2021)

Bad News: Clickbait and Deceptive Ads on News and Misinformation Websites
Eric Zeng, Tadayoshi Kohno, Franziska Roesner
Workshop on Technology and Consumer Protection (2020)

Understanding and Improving Security and Privacy in Multi-User Smart Homes: A Design Exploration and In-Home User Study
Eric Zeng, Franziska Roesner
USENIX Security Symposium (2019)

Fixing HTTPS Misconfigurations at Scale: An Experiment with Security Notifications
Eric Zeng, Frank Li, Emily Stark, Adrienne Porter Felt, Parisa Tabriz
Workshop on the Economics of Information Security (2019)

End User Security and Privacy Concerns with Smart Homes
Eric Zeng, Shrirang Mare, Franziska Roesner
Symposium on Usable Privacy and Security (2017)

Confidante: Usable Encrypted Email – A Case Study with Lawyers and Journalists
Ada Lerner*, **Eric Zeng***, Franziska Roesner
IEEE European Symposium on Security & Privacy (2017)
*Co-first authors listed in alphabetical order

Talks

USENIX Enigma — Jan 2023
Characterizing and Measuring Misleading and Harmful Online Ad Content at Scale

FTC PrivacyCon — Nov 2022
What Factors Affect Targeting and Bids in Online Advertising? A Field Measurement Study

Stanford Security Lunch — Jan 2022
Polls, Clickbait, and Commemorative $2 Bills: Problematic Political Advertising on News and Media Websites Around the 2020 U.S. Elections

AdBlocker Developer Summit — Oct 2021
Characterizing and Measuring "Bad" Ad Content on the Internet

Awards

Hacherl Endowed Fellowship — Sep 2016 – Jun 2017
University of Washington, Paul G. Allen School of Computer Science & Engineering

USENIX Student Grant Recipient — Jul 2017
Symposium on Usable Security and Privacy (SOUPS)

IEEE Student Travel Grant Recipient — May 2017

IEEE European Symposium on Security & Privacy

Mentorship

PhD Students

Clement Fung	Jul 2022 – Present
Owen Xia	Jul 2022 – Present
McKenna McCall	Jul 2022 – May 2023
Miranda Wei	Oct 2020 – Jun 2022

Master's and Undergraduate Students

Lydia Hu	Jul 2022 – Present
Manasi Shah	Jan 2022 – Jun 2022
Maia Xiao	Jan 2022 – Jun 2022
Theo Gregersen	Jan 2020 – Jun 2022
Rachel McAmis	Oct 2020 – Jun 2022
Mitali Palekar	Oct 2017 – Jun 2017

Teaching Experience

Guest Lecturer – Carnegie Mellon University — Oct 2023
Privacy, Policy, Law, and Technology
"Online Advertising and Media Funding", "Web Privacy and Tracking"

Teaching Assistant — University of Washington — Fall 2020, Fall 2018
CSE 484: Computer Security and Privacy

Guest Lecturer – University of Washington — Feb 2018
CSE 120: Computer Science Principles
"Computer Security: A Taste of Attacks and Defenses"

Professional Service

Program Committee, IEEE S&P	2023
External Reviewer, IEEE S&P Magazine	2024
External Reviewer, CHI	2021-22, 2024
External Reviewer, CSCW	2021
Student Volunteer, SOUPS	2020
Invited Reviewer, ACM Computing Surveys	2020
Student Volunteer, EuroUSEC	2017
Student Volunteer, IEEE Euro S&P	2017

Department Service

UW CSE Grad Applications Committee	2019-22
UW CSE Ski Day Co-Chair	2019-22
Grad Student Contributor, UW CSE DEI Strategic Plan	2020

UW CSE Prospective Student Visit Days Volunteer	2019
UW CSE TGIF (Social Hour) Co-Chair	2017–18
Mentor, UW CSE New Grad Mentor Program	2017–18
UW CSE Undergrad Tutor	2016
Volunteer, UW CSE Computing Open House	2015

Work Experience

Postdoctoral Research Associate — **Carnegie Mellon University** Jun 2022 – Present

I am currently a postdoc at the CyLab Security & Privacy Institute, where I work with Prof. Lujo Bauer. I support graduate students and their research through mentoring, project management, and hands-on writing, engineering, and data analysis. I have collaborated on research spanning diverse areas of security and privacy, such as developing explainable AI for anomaly detection in industrial control systems (NDSS '24) and evaluating the usability of static analysis tools for end-user programming in smart homes (SOUPS '23). Beyond student projects, I have assisted in the writing of an NSF grant, I served on the program committee for IEEE S&P 2023 and I contributed external reviews for CHI and IEEE S&P Magazine.

Graduate Research Assistant — **University of Washington** Sep 2015 - Jun 2022

I completed a PhD in the Paul G. Allen School of Computer Science & Engineering under the supervision of Prof. Franziska Roesner. I led multiple research efforts that substantially advanced their respective areas. For my dissertation, I conducted a systematic investigation of the content and spread of deceptive advertising on the web. I have presented this work to industry and government policymakers at venues like the Federal Trade Commission's PrivacyCon, and I have released tools and datasets that external researchers use to audit harmful online advertising practices. My work on smart homes was some the first to identify interpersonal privacy as a key concern of users and laid a foundation for research on safety for bystander users. My research has been published at multiple top conferences in security and HCI, including USENIX Security, CHI, and IMC.

Additionally, I actively engaged in mentorship and service activities in my department: I served on the graduate admissions committee and organized community-building events. I also mentored several undergraduate researchers who successfully published their work and pursued graduate studies.

Research Intern — **Microsoft Research** Jun-Sep 2021

I was an intern in the Cryptography and Privacy Group, where I was mentored by Kim Laine and Esha Ghosh. I helped a product team assess the viability of a fuzzy passphrase authentication scheme for decentralized wallets. I conducted an extensive literature review and an online experiment with 1200 participants to evaluate the usability of the proposed system.

Software Engineering Intern — **Google** Jun-Sep 2017

I was an intern on the Chrome Usable Security team, where I was mentored by Emily Stark. I helped the team reduce TLS security issues on the web that caused users to see security errors. I conducted an experiment to evaluate whether sending security notifications to webmasters would drive remediation of HTTPS misconfigurations.