Yixin Zou

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Research Interest

My research focuses on the intersection of privacy, security, and human-computer interaction, particularly (1) understanding users' security and privacy perception and behavior, and (2) providing actionable solutions and guidance to help users better manage their personal data, in contexts such as data breach notifications, phishing warnings, and website opt-out choices.

Education

2017-2022 Ph.D. in Information, University of Michigan, Ann Arbor, MI
Advisor: Dr. Florian Schaub

2015-2017 B.S. in Advertising, University of Illinois at Urbana-Champaign, Urbana, IL
Graduated with the Highest Honor (top 5% in the college)

Employment

01/2019-Present **Research Assistant - Web Security Engineer**
Mozilla, the Firefox team

Designing Effective and Actionable Data Breach Notifications for Monitor
I conduct user testings and large-scale experiments, leveraging Firefox Monitor, to explore best practices of communicating risks and enhancing the actionability of recommendations for data breach notifications. Research findings are shared to Firefox Monitor team to help refine in-product communications and improve the overall user experience, aiming at nudging users to take protective actions after being affected by data breaches.

09/2017-Present **Graduate Student Research Assistant**
University of Michigan, School of Information, Ann Arbor, MI

Exploring Reasons for Consumer Inaction Against Data Breaches
I conducted a series of studies to explore reasons why consumers take little to no protective actions after data breaches, including a qualitative study on consumers' risk perception and protective actions following the 2017 Equifax data breach (published in *SOUPS'18*), and a content analysis of readability and usability issues among current data breach notifications (to appear in *CHI'19*).

Developing Solutions for Website Opt-out Choices
As part of the Usable Privacy Policy Project, I evaluated the usability of marketing/targeted advertising opt-outs and data deletion choices on websites in collaboration with Carnegie Mellon University researchers. I co-developed the study protocol and analysis template, trained other students for coding, and contributed to data analysis and writing of findings. Our next steps are to (1) conduct user studies to investigate how current opt-outs are conceptualized and utilized by end-users; and (2) prototype more usable opt-out alternatives and evaluate their performance.

Designing Effective Anti-phishing Warnings in Email clients
Together with researchers at the University of Washington, I planned and conducted an online behavioral experiment on the effectiveness of anti-phishing warnings with different design variants. I led the effort of statistical analysis and we found our link-focused warnings were more effective at preventing users from clicking phishing links compared to traditional banner warnings. Manuscript to appear in *CHI'19*.

09/2016- **05/2017**	**Research Fellow** *Illinois Informatics Institute, Champaign, IL*

Examining Attitude Formation Regarding Controversial Topics on Twitter
As part of the Undergraduate Research Apprenticeship Program, I investigated the social and psychological factors that come into play in Twitter users' debate on controversial topics, such as the conflict between individual privacy and national security. My duties included annotating tweets, performing exploratory data analysis and building regression models of the gathered data, creating data visualization dashboards in Tableau and writing up reports.

04/2016- **05/2017**	**Research Assistant** *University of Illinois at Urbana-Champaign (UIUC), College of Media, Urbana, IL*

Understanding Bystanders' Privacy Concerns and Apathy towards Cyberbullying Victims
I assisted with an online experiment examining bystanders' guilt attribution in cyberbullying cases with different kinds of privacy violation and sources of the breached data, including the experimental design, development and revision of the evaluation survey, data analysis and writing.

Exploring the Application of Virtual Reality (VR) in Advertising
Working in a large interdisciplinary team, we studied consumers' attitudes and reactions towards content branded by virtual reality. I assisted with filming a 360-degree video as the testing material, and conducting semi-structured interviews to gauge the user experience. We then conducted a between-subject lab experiment to assess participants' reactions and the feeling of telepresence to content displayed by different VR devices.

09/2015- **05/2017**	**Data Analytics Intern** *Center for Innovation in Teaching and Learning, UIUC, Champaign, IL*

Improving the Quality of UIUC's Massive Open Online Courses Offering
My primary job duty is to analyze open-ended survey data of UIUC's Massive Open Online Courses (MOOCs) using ATLAS.ti and SPSS. The survey investigates participants' activity, demographics, and satisfaction rate. Additionally, I provided assistance to help clients with survey construction, design, and implementation, including survey question writing, sampling methodology, pilot testing, statistical analyses, and report writing.

Publications

Referred Journal & Magazine Publications

2019	**Beyond Mandatory: Making Data Breach Notifications Useful for Consumers** **Zou, Y.**, & Schaub, F. *IEEE Security & Privacy*, 17(2), 67-72. [link]

Referred Conference Papers

2019	**You 'Might' Be Affected: An Empirical Analysis of Readability and Usability Issues in Data Breach Notifications** **Zou, Y.**, Danino, S., Sun, K., & Schaub, F. To appear in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM. **Put Your Warning Where Your Link Is: Improving and Evaluating Email Phishing Warnings** Petelka, J., **Zou, Y.**, & Schaub, F. To appear in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. ACM. **Best Paper Award Honorable Mention.**

2018   **"I've Got Nothing to Lose": Consumers' Risk Perceptions and Protective Actions after the Equifax Data Breach**

Zou, Y., Mhaidli, A. H., McCall, A., & Schaub, F. In Proceedings of *the Fourteenth Symposium on Usable Privacy and Security (SOUPS '18)*, Baltimore, MD, August 12-14. **Distinguished Paper Award.** [link]

2017   **Really Being There?: Telepresence in Virtual Reality Branded Content**
Shen, J., Stenger, M., Lechowicz J., Chen C., Yang, R., Sivasankaran, A., Wang Y., Zhang, J., **Zou, Y.**, Katz, H., & Nelson M. R. Paper presented at *the Annual Conference of the Association for Education in Journalism and Mass Communication (AEJMC)*, Chicago, IL, August 9-12.

Users' Attitudes towards the "Going Dark" Debate
Addawood, A., **Zou, Y.**, & Bashir, M. In Proceedings of *the 8th International Conference on Applied Human Factors and Ergonomics (AHFE '17)*, Los Angeles, CA, July 17-21. [link]

The Impacts of Privacy Hypocrisy, Victim Characterization, Gender, and Context on Bystanders' Guilt Attribution in a Cyberbullying Suicide
Yao, M., **Zou, Y.**, Linz, D., & Jaoude, P. Paper presented at *the 67th Annual Conference of International Communication Association (ICA)*, San Diego, CA, May 25-29.

Referred Conference Work-in-Progress and Workshop Papers

2018   **An Empirical Analysis of Online Consent and Opt-Out Experiences**
Habib, H., **Zou, Y.**, Jannu, A., Swoopes, C., Cranor, L. F., & Schaub, F. Paper presented at *the 11th Annual Privacy Law Scholars Conference (PLSC '18)*, Washington D.C., USA, May 30-31.

Concern But No Action: Consumers' Reactions to the Equifax Data Breach
Zou, Y. & Schaub, F. In *Proceedings of the ACM Conference on Human Factors in Computer Systems (CHI '18) Late Breaking Work*, Montreal, Canada, April 22-26. [link]

An Empirical Analysis of Website Data Deletion and Opt-Out Choices
Habib, H., **Zou, Y.**, Jannu, A., Swoopes, C., Acquisti, A., Cranor, L. F., Sadeh, N., & Schaub, F. Paper presented at *CHI '18 Workshop "The General Data Protection Regulation, an opportunity for the HCI Community?"*, Montreal, Canada, April 22. [link]

Referred Poster Presentations

2018   **"I've Got Nothing to Lose": Consumers' Risk Perceptions and Protective Actions after the Equifax Data Breach**

Zou, Y., Mhaidli, A. H., McCall, A., & Schaub, F. Poster presented at *the 6th Midwest Security Workshop (MSW6)*, Urbana, IL, April 14.

Other Non-referred Publications

2017   **Creating and Testing Virtual Reality (VR) for UIUC: Immersive Media & the Consumer**
Zou, Y. & Sivasankaran, A. Poster presented at *the Undergraduate Research Symposium at UIUC*, Urbana, IL, April 23-29.

2016   **Is This Controversial? Examining Factors Affecting User Opinions**
Addawood, A., **Zou, Y.**, & Bashir, M. Poster presented at *2016 Research Showcase, School of Information Science at UIUC*, Urbana, IL, October 24.

Open-ended vs. Close-ended Survey Questions in Analyzing Coursera Respondent Data
Forbes, E., Franco, S., & **Zou, Y**. Poster presented at *the Undergraduate Research Symposium at UIUC*, Urbana, IL, April 17-23.

Honors and Awards

2019   **Symantec Research Labs Graduate Fellowship**
Symantec
The SRL Graduate Fellowship provides up to $20,000 USD that may be used to cover one year of the student's tuition fees and to reimburse expenses incurred by the student to engage into research collaboration with Symantec.

Finalist, Facebook Fellowship Award
Facebook
Award recipients receive two years of tuition and fees paid, a stipend of $37,000 per year and up to $5,000 in conference travel support.

2018   **SOUPS Distinguished Paper Award**
SOUPS 18: the Fourteenth Symposium on Usable Privacy and Security
"I've Got Nothing to Lose": Consumers' Risk Perceptions and Protective Actions after the Equifax Data Breach, with Mhaidli, A. H., McCall, A., & Schaub, F.

UMSI Pre-candidacy Paper Distinction Award
School of Information, University of Michigan
Passed the pre-candidacy paper milestone with distinction (the written paper and oral defense are exemplary, representing the top 10% of students in this endeavor in any given year).

2017   **The Stevick Foundation Excellence in Media Research, Outstanding**
Marajen Stevick Foundation
Creating and Testing Virtual Reality (VR) for UIUC: Immersive Media & the Consumer with Sivasankaran, A., presented at the Undergraduate Research Symposium at UIUC.

Annual Fund Scholarship
College of Media, University of Illinois at Urbana-Champaign
$2,000, for the academic year 2016-2017, awarded to undergraduates with outstanding academic performance.

Grants

2018   **SOUPS '18 Student Grant**
Sponsored by the National Science Foundation
$695, awarded for invited participation at the Fourteenth Symposium on Usable Privacy and Security (SOUPS '18).

Rackham Conference Travel Grant
Rackham Graduate School, University of Michigan
$1,050, awarded for invited participation at the ACM Conference on Human Factors in Computing Systems (CHI '18).

Media Coverage

2018   **The Equifax data breach study featured in news articles and radio interview | August 2018**
Our study on consumer reactions to the Equifax data breach, published at SOUPS '18, has been featured by the New York Times and the Detroit Free Press, reprinted by over 80 regional and local media outlets. Also interviewed by WWJ Detroit Radio on this topic.

Teaching Experience

Fall 2018   **Graduate Student Instructor, SI 110: Introduction to Information Studies**
University of Michigan, School of Information, Ann Arbor, MI

Attendants are about 200 undergraduate students interested in majoring in information. Duties included assisting with the preparation of course materials, leading two weekly discussion sections, holding office hour and grading.

University Service

2018-2019   **Undergraduate Research Opportunity Program (UROP) | Mentor**
Lead two undergraduate students to work on research projects: hold weekly meetings; help mentees build relevant skills such as survey research, interviewing, and data analysis; assist mentees in making the transition from classroom learning to real-world research applications.

UMSI Peer Mentorship Program | Mentor
Work as the mentor of incoming PhD students: attend monthly meetings; answer questions about the program and life as a doctoral student in general; provide support to each other's research work and well-being.

Invited Talks

2018   **Designing Effective and Actionable Data Breach Notices: Implications for Firefox Monitor**
Invited speaker. The Firefox Monitor team, Mozilla. Nov. 2018.

Information Regulation: How information Regulates and Is Regulated & Privacy
Guest lecturer. SI 110: Introduction to Information. School of Information, University of Michigan, Ann Arbor, MI, USA. Oct. 2018.

Skills

Programming Languages	Python, JavaScript, HTML, CSS
Statistical Analysis	R, SPSS, Microsoft Excel, Tableau, Google Analytics
Survey Design	Qualtrics, SurveyGizmo
Qualitative Coding	ATLAS.ti, NVivo