

Research Interests

Usable authentication, privacy-enhancing tools, human factors

Education

Carnegie Mellon University

PH.D. IN SOCIETAL COMPUTING, INSTITUTE FOR SOFTWARE RESEARCH (GPA: 3.91/4.33)

Advisors: Lorrie Faith Cranor, Lujo Bauer

Pittsburgh, PA

Aug 2014–Exp. May 2020

North Dakota State University

B.S. IN COMPUTER SCIENCE (GPA: 3.97/4.00)

Fargo, ND

Aug 2009–May 2014

Publications

Comparing hypothetical and realistic privacy valuations

Joshua Tan, Mahmood Sharif, Sruti Bhagavatula, Matthias Beckerle, Michelle L. Mazurek

2018 Workshop on Privacy in the Electronic Society (WPES '18), 2018

Self-driving cars and data collection: Privacy perceptions of networked autonomous vehicles

Cara Bloom, **Joshua Tan**, Javed Ramjohn, Lujo Bauer

Thirteenth Symposium On Usable Privacy and Security (SOUPS '17), 2017

Can unicorns help users compare crypto key fingerprints?

Joshua Tan, Lujo Bauer, Joseph Bonneau, Lorrie Faith Cranor, Jeremy Thomas, Blase Ur

Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '17), 2017

(Do not) Track me sometimes: Users' contextual preferences for web tracking

William Melicher, Mahmood Sharif, **Joshua Tan**, Lujo Bauer, Mihai Christodorescu, Pedro Giovanni Leon

Proceedings on Privacy Enhancing Technologies (PETS 2016), 2016

The effect of developer-specified explanations for permission requests on smartphone user behavior

Joshua Tan, Khanh Nguyen, Michael Theodorides, Heidi Negrón-Arroyo, Christopher Thompson, Serge Egelman, David Wagner

Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '14), 2014

Research Experiences

CyLab Security and Privacy Institute, Carnegie Mellon University

GRADUATE RESEARCH ASSISTANT

Research projects I have worked on:

- Modeling password guessability using statistical and machine learning techniques
- Exploring usability of password policies through experimental user studies
- Exploring the usability and effective security of different textual and graphical representations for cryptographic fingerprints against MITM attacks on distracted or inattentive users
- Examining the effects of scenario realism and purpose of use on users' monetary valuations of their personal information

Pittsburgh, PA

Aug 2014–Present

North Dakota State University

RESEARCH ASSISTANT, MCNAIR SCHOLAR

- Developed program that collects constraints for a program dependence graph and execution path (Mentor: Hyunsook Do)
- Assisted in development of interactive, multi-user, virtual learning environment (Mentor: Brian Slator)

Fargo, ND

Aug 2012–May 2014

Team for Research in Ubiquitous Secure Technology (TRUST)

Berkeley, CA

RESEARCH INTERN

June 2013–Aug 2013

- Research Experience for Undergraduates (REU) at the University of California, Berkeley
- Performed static binary analysis on 4,400 iOS apps to analyze developer adoption rate for explaining permission requests
- Conducted online surveys to understand user effects and developer motivations

Professional Experiences

MIT Lincoln Laboratory

Lexington, MA

INTERN

May 2018–Aug 2018

- Conducted a case study on the design decisions and deployment process of mandatory 2FA among Lab employees
- Interviewed staff members involved in the 2FA design process to extract useful insights and considerations
- Examined usability and security sentiments of smart-card-and-PIN 2FA through an employee survey
- Mentor: Richard Shay

Thomson Reuters

Eagan, MN

SOFTWARE ENGINEER INTERN

May 2014–Aug 2014

Teaching Experiences & External Reviewing

- 2018, 2019 External reviewer for ACM Transactions on Privacy and Security (TOPS)
Spring 2017 TA for 18-732: Secure Software Systems
Fall 2015 TA for 15-421: Information Security & Privacy

Activities

- 2017, 2019 OurCS Workshop for Undergraduate Women in Computer Science
2011–2014 NDSU Student Chapter of Association for Computing Machinery, Vice Chair (2013), SIG-SEC leader
2012–2013 Students and Technology in Academia, Research, and Service (STARS), NDSU Student Leadership Corp

Talks & Posters

- WPES 2018 *Comparing hypothetical and realistic privacy valuations.* Toronto, Canada.
CHI 2017 *Can unicorns help users compare crypto key fingerprints?* Denver, Colorado.
SOUPS '15 *A framework for comparative usability studies on secure device pairing.* Achal Channarasappa, Pranita Ramakrishnan, **Joshua Tan**, Jeremy Thomas. Ottawa, Canada. Poster.

Honors & Awards

- 2014-2015 Carnegie Mellon Usable Privacy and Security (CUPS) doctoral training fellowship
2013 1st place team member, MechMania AI programming competition
2013 1st place team member, Digi-Key collegiate computing competition
2012 Frank MecLester Murphy scholarship
2012, 2013 Microsoft computer science undergraduate scholarship
2009 Emil H. Rice Scholarship
2009 NDSU Collaborative for Scholarships in Computer, Information Sciences, and Engineering scholarship

Skills

Programming/Tools Python, R, Java, L^AT_EX, SQL, Linux, Django, Docker, Git

Recreational Basketball, Guitar Hero, Piano