Zane Ma

Ph.D. Candidate
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Department of Computer Science
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EDUCATION

2015 – PRESENT	**Doctor of Philosophy**
	COMPUTER SCIENCE *University of Illinois at Urbana-Champaign*
	Advisor: Michael D. Bailey
2008 – 2012	**Bachelor of Arts**
	CHEMISTRY W/ HONORS *Princeton University*
	Advisior: Erik J. Sorensen

RESEARCH SUMMARY

My research applies an empirical lens to understand and improve the security, performance, and availability of networked systems. My current research falls into two categories: 1) improving the transparency and usability of web server identity/authentication, and 2) studying trustworthiness as a property of networked communications, building upon the properties of confidentiality, integrity, and authenticity.

FELLOWSHIPS AND AWARDS

2020 – 2021	Mavis Future Faculty Fellowship
2020 – 2021	Yunni & Maxine Pao Memorial Fellowship
2019	Best Paper Award, World Wide Web Conference (WWW)

PUBLICATIONS

What's in a Name? Exploring CA Certificate Control
Zane Ma, Joshua Mason, Manos Antonakakis, Zakir Durumeric, Michael Bailey. *USENIX Security Symposium (Sec '21).* August 2021.

Measuring Identity Confusion with Uniform Resource Locators
Joshua Reynolds, Deepak Kumar, Zane Ma, Rohan Subramanian, Meishan Wu, Martin Shelton, Joshua Mason, Emily Stark, Michael Bailey. *ACM Conference on Human Factors in Computing Systems (CHI '20).* April 2020.
Accepted: 19 / 61 submissions (31.1%)

The Impact of Secure Transport Protocols on Phishing Efficacy
Zane Ma, Joshua Reynolds, Joseph Dickinson, Kaishen Wang, Taylor Judd, Joseph D. Barnes, Joshua Mason, Michael Bailey. *Workshop on Cyber Security Experimentation and Test (CSET '19).* August 2019.
Accepted: 225 / 1247 submissions (18.0%)

OUTGUARD: Detecting In-Browser Covert Cryptocurrency Mining in the Wild
Best Paper Award
Amin Kharraz, Zane Ma, Paul Murley, Charles Lever, Joshua Mason, Andrew Miller, Nikita Borisov, Manos Antonakakis, Michael Bailey. *World Wide Web Conference (WWW '19).* May 2019.
Accepted: 43 / 174 submissions (24.7%)

Measuring Ethereum's Peer-to-Peer Network
Seoung Kim, Zane Ma, Siddarth Murali, Josh Mason, Andrew Miller, Michael Bailey. *ACM Internet Measurement Conference (IMC '18).* November 2018.
Accepted: 85 / 522 submissions (16.3%)

Understanding the Mirai Botnet
Zane Ma, Manos Antonakakis, Tim April, Michael Bailey, Matt Bernhard, Elie Bursztein, Jaime Cochran, Zakir Durumeric, J. Alex Halderman, Luca Invernizzi, Michalis Kallitsis, Deepak Kumar, Chaz Lever, Joshua Mason,

Damian Menscher, Chad Seaman, Nick Sullivan, Kurt Thomas, Yi Zhou. *USENIX Security Symposium (Sec '17).* August 2017.

Accepted: 68 / 423 submissions (16.1%)

The Security Impact of HTTPS Interception
Zakir Durumeric, <u>Zane Ma</u>, Drew Springall, Richard Barnes, Nick Sullivan, Elie Bursztein, Michael Bailey, J. Alex Halderman, Vern Paxson. *Network and Distributed Systems Symposium (NDSS '17).* February 2017.

Accepted: 164 / 966 submissions (17.0%)

Security Challenges in an Increasingly Tangled Web
Deepak Kumar, <u>Zane Ma</u>, Zakir Durumeric, Ariana Mirian, Joshua Mason, Michael Bailey J. Alex Halderman. *World Wide Web Conference (WWW '17).* April 2017.

Accepted

An Internet-Wide View of ICS Devices
Ariana Mirian, <u>Zane Ma</u>, David Adrian, Matthew Tischer, Thasphon Chuenchujit, Tim Yardley, Robin Berthier, Josh Mason, Zakir Durumeric, J. Alex Halderman, Michael Bailey. *IEEE Conference on Privacy, Security, and Trust (PST '16).* December 2016.

Accepted

Teaching

Fall 2020	**CS 461: Intro to Comp. Security**	Teaching Assistant*
Spring 2020	**CS 461: Intro to Comp. Security**	Teaching Assistant
Fall 2019	**CS 461: Intro to Comp. Security**	Teaching Assistant
Spring 2019	**CS 461: Intro to Comp. Security**	Teaching Assistant
Spring 2018	**CS 461: Intro to Comp. Security**	Teaching Assistant
Fall 2015	**CS 241: System Programming**	Teaching Assistant*

Outstanding instructor rating (top 10%)

Mentorship

2020 – Present	**James Austgen**	Undergrad	Mapping IoT root certificate stores from firmware.
2019 – 2020	**Zhengdai Hu**	Undergrad	Working on CA audit/policy analysis.
2018 – 2019	**Kaishen Wang**	Masters	Thesis: Malicious web content from domain blacklists.
2017 – 2018	**Siddarth Murali**	Masters	Thesis: Ethereum neighbor inference.
2017 – 2018	**Simon Kim**	Masters	Thesis: Ethereum P2P network measurement.
2016 – 2017	**Alex Mitsdarfer**	Masters	Thesis: Institutional Active Directory usage.

Service

Institutional

2019 – Present	**Engingeering Graduate Student Advisory Committee**
	General Member
2018 – Present	**CS Graduate Student Organization**
	General Member
2016 – Present	**CS Graduate Ambassador**
2019 – 2020	**Computer Science Committee on Broadening Participation in Computing (BPC)**
	Student Member
2017 – 2019	**Senate Committee on IT**
	Student Member
2017 – 2018	**CS Graduate Student Organization**
	Social Chair
2016 – 2018	**Students Advising Graduate Education**
	General Member

Professional

2018   **IMC Student TPC**
  Student member

Talks

Conferences

Aug. 2019	**The Impact of Secure Transport Protocols on Phishing Efficacy**
	Workshop on Cyber Security Experimentation and Test (CSET '19)
Feb. 2018	**Mirai and the Future of IoT botnets**
	M3AAWG: 42nd General Meeting
Aug. 2017	**Understanding the Mirai botnet**
	USENIX Security Symposium (Sec '17)

Seminars

Apr. 2020	**Fundamentals of Phishing: A Usability Perspective**
	UC San Diego Security Seminar
Mar. 2020	**Grad school life: Finding the best fit**
	Illinois CS Graduate Student Recruitment
Aug. 2018/2019	**Graduate School: A pioneering journey through the Wild West**
	Illinois CS Graduate Student Orientation
Nov. 2017	**Understanding the Mirai botnet**
	University of Chicago Security Seminar

Research Internships

Jun 2018 – Jul 2018	**Manos Antonakakis**
	Georgia Tech
Jun 2016 – Aug 2016	**Vern Paxson**
	ICSI, UC Berkeley