Zane Ma

Assistant Professor
Oregon State University
Computer Science
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POSITIONS

2023–PRESENT	**Assistant Professor** at *Oregon State University*
	- Lead the Applied Security and Trust Research @ OSU (ASTRO) Lab.
	- Lead multi-institution research team for DARPA project on 5G defensive cyber operations.
2021–2023	**Research Scientist II** at *Georgia Institute of Technology*
	Advisor: Manos Antonakakis
	- Co-advised eight Ph.D. students on DNS, malware, IoT, and PKI research projects.
	- Led research team for multi-institution $8M DARPA project: 5G defensive cyber operations.
	- Developed certificate data and analysis pipeline to enable PKI research.

EDUCATION

2015 – 2021	**Doctor of Philosophy** in Computer Science, *University of Illinois at Urbana-Champaign*
	Advisor: Michael D. Bailey
	Committee: Adam Bates Yuile, Gang Wang, Nikita Borisov, Zakir Durumeric
2008 – 2012	**Bachelor of Arts** with Honors in Chemistry, *Princeton University*
	Advisior: Erik J. Sorensen

AWARDS AND FELLOWSHIPS

2021	Illinois CS Graduate Student Outstanding Service Award
2020	Mavis Future Faculty Fellowship
2020	Yunni & Maxine Pao Memorial Fellowship
2019	Best Paper Award, The Web Conference (WWW)

RESEARCH PUBLICATIONS

13. **[IMC '23]** <u>Zane Ma</u>, Aaron Faulkenberry, Thomas Papastergiou, Zakir Durumeric, Michael Bailey, Angelos Keromytis, Fabian Monrose, and Manos Antonakakis. "**Stale TLS Certificates: Investigating Precarious Third-Party Access to Valid TLS Keys.**" *ACM Internet Measurement Conference (IMC)*. October 2023. (Acceptance rate: 25.9% = 52 of 201 submissions)

12. **[ACSAC '22]** Aaron Faulkenberry, Athanasios Avgetidis, <u>Zane Ma</u>, Omar Alrawi, Charles Lever, Panagiotis Kintis, Fabian Monrose, Angelos Keromytis, Manos Antonakakis. "**View from Above: Exploring the Malware Ecosystem from the Upper DNS Hierarchy.**" *Annual Computer Security Applications Conference (ACSAC)*. December 2022. (Acceptance rate: 24.1% = 73 of 303 submissions)

11. **[IMC '21]** <u>Zane Ma</u>, James Austgen, Joshua Mason, Zakir Durumeric, Michael Bailey. "**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem.**" *ACM Internet Measurement Conference (IMC)*. November 2021. (Acceptance rate: 28.1% = 55 / 196 submissions)

10. **[USENIX '21]** <u>Zane Ma</u>, Joshua Mason, Manos Antonakakis, Zakir Durumeric, Michael Bailey. "**What's in a Name? Exploring CA Certificate Control.**" *USENIX Security Symposium (Sec)*. August 2021. (Acceptance rate: 18.8% = 248 / 1319 submissions)

9. **[WWW '21]** Paul Murley, <u>Zane Ma</u>, Joshua Mason, Michael Bailey, Amin Kharraz. "**WebSocket Adoption and the Landscape of the Real-Time Web.**" *The Web Conference (WWW)*. April 2021. (Acceptance rate: 20.6% = 357 / 1736 submissions)

8. **[CHI '20]** Joshua Reynolds, Deepak Kumar, <u>Zane Ma</u>, Rohan Subramanian, Meishan Wu, Martin Shelton, Joshua Mason, Emily Stark, Michael Bailey. "**Measuring Identity Confusion with Uniform Resource Locators.**" *ACM Conference on Human Factors in Computing Systems (CHI)*. April 2020. (Acceptance rate: 24.3% = 760 / 3126 submissions)

7. **[CSET '19]** <u>Zane Ma</u>, Joshua Reynolds, Joseph Dickinson, Kaishen Wang, Taylor Judd, Joseph D. Barnes, Joshua Mason, Michael Bailey. "**The Impact of Secure Transport Protocols on Phishing Efficacy.**" *Workshop on Cyber Security Experimentation and Test (CSET)*. August 2019. (Acceptance rate: 31.1% = 19 / 61 submissions)

6. **[WWW '19]** Amin Kharraz, <u>Zane Ma</u>, Paul Murley, Charles Lever, Joshua Mason, Andrew Miller, Nikita Borisov, Manos Antonakakis, Michael Bailey. "**OUTGUARD: Detecting In-Browser Covert Cryptocurrency Mining in the Wild.**" *The Web Conference (WWW)*. **Best Paper Award.** May 2019. (Acceptance rate: 18.0% = 225 / 1247 submissions)

5. **[IMC '18]** Seoung Kim, <u>Zane Ma</u>, Siddarth Murali, Josh Mason, Andrew Miller, Michael Bailey. "**Measuring Ethereum's Peer-to-Peer Network.**" *ACM Internet Measurement Conference (IMC)*. November 2018. (Acceptance rate: 24.7% = 43 / 174 submissions)

4. **[USENIX '17]** <u>Zane Ma</u>, 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. "**Understanding the Mirai Botnet.**" *USENIX Security Symposium (Sec)*. August 2017.

   (Acceptance rate: 16.3% = 85 / 522 submissions)

3. **[NDSS '17]** Zakir Durumeric, <u>Zane Ma</u>, Drew Springall, Richard Barnes, Nick Sullivan, Elie Bursztein, Michael Bailey, J. Alex Halderman, Vern Paxson. "**The Security Impact of HTTPS Interception.**" *Network and Distributed Systems Symposium (NDSS)*. February 2017. (Acceptance rate: 16.1% = 68 / 423 submissions)

2. **[WWW '17]** Deepak Kumar, <u>Zane Ma</u>, Zakir Durumeric, Ariana Mirian, Joshua Mason, Michael Bailey, J. Alex Halderman. "**Security Challenges in an Increasingly Tangled Web.**" *World Wide Web Conference (WWW)*. April 2017. (Acceptance rate: 17.0% = 164 / 966 submissions)

1. **[PST '16]** 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. "**An Internet-Wide View of ICS Devices.**" *IEEE Conference on Privacy, Security, and Trust (PST)*. December 2016. (Accepted.)

FUNDING

TALKS

Conferences & Forums

Oct. 2023	**Stale TLS Certificates: Investigating Precarious Third-Party Access to Valid TLS Keys**
	ACM Internet Measurement Conference (IMC '23)
Apr. 2022	**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem**
	Hot Topics in the Science of Security (HotSoS '22)
Nov. 2021	**Tracing Your Roots: Exploring the TLS Trust Anchor Ecosystem**
	ACM Internet Measurement Conference (IMC '21)
Oct. 2021	**Exploring CA Certificate Control**
	CA/Browser Forum
Aug. 2021	**What's in a Name? Exploring CA Certificate Control**
	USENIX Security Symposium (Sec '21)
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 & Guest Lectures

Jul. 2022	**Reflections on Trusting Identifiers: The Foundations of Social Engineering**
	Stanford Security Seminar
Nov. 2021	**WebPKI and Trust**
	Stanford CS249i Guest Lecture
Sept. 2021	**Understanding the Trust Relationships of the Web PKI**
	Georgia Tech Cybersecurity Lecture Series
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	**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

TEACHING

Fall 2023	**CS499/579: Empirical Computer Security**[†]	INSTRUCTOR
Spring 2021	**CS 461: Intro to Comp. Security**	TEACHING ASSISTANT
Fall 2020	**CS 461: Intro to Comp. Security**	TEACHING ASSISTANT*
Spring 2020	**CS 461: Intro to Comp. Security**	TEACHING ASSISTANT
	- Built new network security project: ARP spoofing, MITM attacks, off-path TCP hijacking.	
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%)
[†]*Newly created course*

Mentorship

Ph.D. students

2024 – PRES.   **Michelle Lewis**

Masters students

2023 – PRES.   **Lucas Ball**

Undergraduate

2023 – PRES.   **Abigail Whittle**   Domain registration economics.
2023 – PRES.   **Lucas Stephens**   User authentication breaches.

Service

Professional

2024	**IEEE Symposium on Security and Privacy (S&P)**	*Program Committee*
2023	**Workshop on IoT Security and Cyber Threat Intelligence (IoT SCTI)**	*Program Committee*
2023	**Workshop on Cryptography Applied to Transparency Systems (CATS)**	*Program Committee*
2023	**NSF Secure and Trustworthy Computing (SaTC)**	*Panel Reviewer*
2023	**IEEE Symposium on Security and Privacy (S&P)**	*Program Committee*
2022	**ACM Conference on Computer and Communications Security (CCS)**	*Program Committee*

Institutional

2023 – PRESENT	**Graduate Admissions Committee**	*Member*
2023 – PRESENT	**OSU Security Club**	*Faculty Advisor*

REFERENCES

Michael Bailey
Professor and Founding Chair of School of Cybersecurity and Privacy (SCP)
Georgia Institute of Technology
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Manos Antonakakis
Associate Professor and Dean's Professorship in Electrical and Computer Engineering
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Zakir Durumeric
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