

Penghui Zhang | Curriculum Vitae

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Working

- **Meta Platforms Inc.** **Dec 2021 - Jan 2024**
Deceptive Links in Integrity *Research Scientist (IC4 - 5)*
Measured, detected, and enforced malicious links in the posts/ads of Meta's Family of Apps.
- **Meta Platforms Inc.** **Feb 2024 - Present**
Ranking & Foundation AI team in Monetization *Research Scientist (IC5)*
Developed and productionized AI based ads recommendation models to improve Ads Score.

Education

- **Ph.D., Computer Engineering** **Aug 2016–May 2022**
Arizona State University, Tempe, AZ *Advisor: Adam Doupe & Gail-Joon Ahn*
Thesis: Detection and Prevention of Sophisticated Cyberattacks
- **M.S., Electrical and Computer Engineering** **Aug 2014–May 2016**
The Ohio State University, Columbus, OH *Advisor: Xiaorui (Ray) Wang*
Thesis: Temperature Balancing among Servers with Workload Distribution

Publications

Conference Papers with Proceedings (refereed).....

- Zhibo Sun, Faris Bugra Kokulu, **Penghui Zhang**, Adam Oest, Gianluca Stringhini, Tiffany Bao, Ruoyu Wang, Yan Shoshitaishvili, Adam Doupe, and Gail-Joon Ahn, "From Victims to Defenders: An Exploration of the Phishing Attack Reporting Ecosystem," *Proceedings of the 27th International Symposium on Research in Attacks, Intrusions and Defenses (RAID)*, Sep 2024, Padua, Italy.
- **Penghui Zhang**, Zhibo Sun, Sukwha Kyung, Hans Walter Behrens, Zion Leonahenahe Basque, Haehyun Cho, Adam Oest, Ruoyu Wang, Tiffany Bao, Yan Shoshitaishvili, Gail-Joon Ahn, and Adam Doupe, "I'm SPARTACUS, No, I'm SPARTACUS: Proactively Protecting Users from Phishing by Intentionally Triggering Cloaking Behavior," *Proceedings of the 2022 ACM SIGSAC Conference on Computer and Communications Security (CCS)*, Nov 2022, Los Angeles, CA, USA.
- Zhibo Sun, Adam Oest, **Penghui Zhang**, Carlos Rubio-Medrano, Tiffany Bao, Ruoyu Wang, Ziming Zhao, Yan Shoshitaishvili, Adam Doupe, and Gail-Joon Ahn, "Having Your Cake and Eating It: An Analysis of Concession-Abuse-as-a-Service," *in the Proceedings of the 30th USENIX Security Symposium (USENIX)*, Aug 2021, Vancouver, B.C., CANADA. (18% acceptance rate.)
- **Penghui Zhang**, Adam Oest, Haehyun Cho, Zhibo Sun, RC Johnson, Brad Wardman, Shaown Sarker, Alexandros Kapravelos, Tiffany Bao, Ruoyu Wang, Yan Shoshitaishvili, Adam Doupe, and

Gail-Joon Ahn, "CrawlPhish: Large-scale Analysis of Client-side Cloaking Techniques in Phishing," *to appear in the Proceedings of the 42nd IEEE Symposium on Security & Privacy (IEEE S&P)*, May 2021, San Francisco, CA. (12% acceptance rate.)

- Marzieh Bitaab, Haehyun Cho, Adam Oest, **Penghui Zhang**, Zhibo Sun, Rana Pourmohamad, Doowon Kim, Tiffany Bao, Ruoyu Wang, Yan Shoshitaishvili, Adam Doupe, and Gail-Joon Ahn, "Scam Pandemic: How Attackers Exploit Public Fear through Phishing," *to appear in the Proceedings of the 2020 APWG Symposium on Electronic Crime Research (eCrime)*.
- Adam Oest, Yeganeh Safaei, **Penghui Zhang**, Brad Wardman, Kevin Tyers, Yan Shoshitaishvili, Adam Doupé, and Gail-Joon Ahn, "PhishTime: Continuous Longitudinal Measurement of the Effectiveness of Anti-phishing Blacklists," *in the Proceedings of the 29th USENIX Security Symposium(USENIX)*, Aug 2020, Boston, MA. (16% acceptance rate.)
- Adam Oest, **Penghui Zhang**, Brad Wardman, Eric Nunes, Jakub Burgis, Ali Zand, Kurt Thomas, Adam Doupé, and Gail-Joon Ahn, "Sunrise to Sunset: Analyzing the End-to-end Life Cycle and Effectiveness of Phishing Attacks at Scale," *in the Proceedings of the 29th USENIX Security Symposium(USENIX)*, Aug 2020, Boston, MA. (16% acceptance rate.)
- **Penghui Zhang**, Haehyun Cho, Ziming Zhao, Adam Doupé, and Gail-Joon Ahn, "iCORE: Continuous and Proactive Extrospection on Multi-core IoT Devices," *in Proceedings of the 34th ACM/SIGAPP Symposium On Applied Computing (SAC)*, Limassol, Cyprus, Apr 2019. (24% acceptance rate.)
- Haehyun Cho, **Penghui Zhang**, Donguk Kim, Jinbum Park, Choong-Hoon Lee, Ziming Zhao, Adam Doupé, and Gail-Joon Ahn, "Prime+Count: Novel Cross-world Covert Channels on ARM TrustZone," *in Proceedings of the 34th Annual Computer Security Applications Conference (ACSAC)*, San Juan, Puerto Rico, USA, Dec 2018. (20% acceptance rate.)

Patent

- Raoul Johnson, **Penghui Zhang**, Adam Oest, and Bradley Wardman, "Systems and methods for detecting phishing websites," 11233820, US
- Adam Oest, **Penghui Zhang**, Raoul Johnson, "Neutralizing Evasion Techniques of Malicious Websites," 17079190, US

Service

Technical Program Committee.....

- 2021 The Fifteenth International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP)
- 42nd IEEE Symposium on Security and Privacy (IEEE S&P, Shadow Committee)
- 2021 International Conference on Secure Knowledge Management in the Artificial Intelligence Era (SKM)
- 2020 The Fourteenth International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP)

Session Chair.....

- 2019 IoT Session on ACM/SIGAPP Symposium On Applied Computing (SAC)

Journal Reviewer.....

- Computers & Security
- Journal of Information Processing Systems

External Reviewer.....

- 2020 ACM Conference on Data and Application Security and Privacy (CODASPY)

Experience Summary

Research Scientist	Dec 2021–Present
○ <i>Adversarial Robustness & Holistic Capabilities ENG Team</i>	<i>Meta Platforms, Inc.</i>
Graduate Research Assistant	Jan 2017–Nov 2021
○ <i>SEFCOM - Security Engineering for Future Computing</i>	<i>Arizona State University</i>
InfoSec Intern PhD	May 2020–Aug 2020
○ <i>Applied Research Team</i>	<i>PayPal Inc.</i>
Technical Intern PhD	May 2019–Aug 2019
○ <i>CFIA - Cyber-Fraud Intel.& Analytics</i>	<i>PayPal Inc.</i>
Graduate Teaching Assistant	Aug 2016–May 2017
○ <i>CSE 230, CSE 110, CSE 469</i>	<i>Arizona State University</i>

Technical Strengths

- **Programming Languages:** C, Java, Assembly, Python, Matlab, JavaScript, TeX
Also basic ability with: C++, PHP, VHDL.
- **Skills:** System and Script Programming, JavaScript Cloaking Analysis
- **Operating Systems:** Linux, OP-TEE OS, Windows
- **Computer Architectures:** ARM

Honors and Awards

- **Best Student Paper Award**
“CrawlPhish: Large-scale Analysis of Client-side Cloaking Techniques in Phishing,” by the Organizing Committee of the 42nd IEEE Symposium on Security and Privacy.
- **Distinguished Paper Award**
Second Place Facebook’s Internet Defense Prize
“Sunrise to Sunset: Analyzing the End-to-end Life Cycle and Effectiveness of Phishing Attacks at Scale,” by the Organizing Committee of the 29th USENIX Security Symposium and Facebook.
- **Engineering Graduate Fellowship**
from Ira A. Fulton Schools of Engineering, Arizona State University, 2020

- **Ferdinand A. Stanchi Fellowship**
from Arizona State University, 2019
- **Distinguished Poster Award**
“SeCore: Continuous Extrospection with High Visibility on Multi-core ARM Platforms,” by the Organizing Committee of the 8th ACM Conference on Data and Application Security and Privacy (CODASPY '18).

References

- **Gail-Joon Ahn:** *Email: gahn@asu.edu*
Professor
Fulton Entrepreneurial Professor
Director, Center for Cybersecurity and Digital Forensics
Director, Laboratory of Security Engineering for Future Computing (SEFCOM)
School of Computing, Informatics and Decision Systems Engineering
Ira A. Fulton Schools of Engineering
Arizona State University
- **Adam Doupé:** *Email: doupe@asu.edu*
Associate Professor
Co-Director, Center for Cybersecurity and Digital Forensics
co-Director, Laboratory of Security Engineering for Future Computing (SEFCOM)
School of Computing, Informatics and Decision Systems Engineering
Ira A. Fulton Schools of Engineering
Arizona State University