

Chongzhou Fang

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Higher Education

- **University of California, Davis** Davis, USA
PhD in Computer Engineering Sep. 2020 - Jun. 2025 (Expected)
 - Advised by Prof. Houman Homayoun
- **Southeast University** Nanjing, China
BSc in Information Science Aug. 2016 - Jun. 2020

Research Interest

- Cloud Infrastructure
- Cloud Security
- LLM for System Security
- Serverless Cloud
- Side-Channel Attacks

Industrial Research

- **Intel Programmable Solution Group (PSG)**
Project: Securing Intel's Heterogeneous Computing Platform. Jun. 2022 - Sep. 2022
 - Develop new security features for Intel FPGAs.
 - Develop a library that handles secure communication and attestation protocols between CPU and peripheral FPGAs.

Selected Publications

1. **Large Language Models for Code Analysis: Do LLMs Really Do Their Job?**
Chongzhou Fang, Ning Miao, Shaurya Srivastav, Jialin Liu, Ruoyu Zhang, Ruijie Fang, Asmita Asmita, Ryan Tsang, Najmeh Nazari, Han Wang and Houman Homayoun.
Usenix Security Symposium 2024.
2. **Forget and Rewire: Enhancing the Resilience of Transformer-based Models against Bit-Flip Attacks**
Najmeh Nazari, Hosein Mohammadi Makrani, Chongzhou Fang, Hossein Sayadi, Setareh Rafatirad, Khaled N. Khasawneh and Houman Homayoun.
Usenix Security Symposium 2024.
3. **Fuzzing BusyBox: Leveraging LLM and Crash Reuse for Embedded Bug Unearthing**
Asmita Asmita, Yaroslav Oliynyk, Michael Scott, Chongzhou Fang, Ryan Tsang and Houman Homayoun
Usenix Security Symposium 2024.
4. **SpecScope: Automating Discovery of Exploitable Spectre Gadgets on Black-Box Microarchitectures**
Najmeh Nazari, Behnam Omid, Chongzhou Fang, Hosein Mohammadi Makrani, Setareh Rafatirad, Avesta Sasan, Houman Homayoun, Khaled N Khasawneh
Design, Automation & Test in Europe Conference & Exhibition (DATE) 2024.

5. **Gotcha! I Know What You are Doing on the FPGA Cloud: Fingerprinting Co-Located Cloud FPGA Accelerators via Measuring Communication Links**
Chongzhou Fang, Ning Miao, Han Wang, Jiacheng Zhou, Tyler Sheaves, John M Emmert, Avesta Sasan, Houman Homayoun
 ACM Conference on Computer and Communications Security (CCS) 2023.
6. **Side Channel-Assisted Inference Attacks on Machine Learning-Based ECG Classification**
Jialin Liu, Houman Homayoun, Chongzhou Fang, Ning Miao, Han Wang
 IEEE/ACM International Conference on Computer Aided Design (ICCAD) 2023.
7. **Adversarial Attacks Against Machine Learning-Based Resource Provisioning Systems**
Najmeh Nazari, Hosein Mohammadi Makrani, Chongzhou Fang, Behnam Omid, Setareh Rafatirad, Hossein Sayadi, Khaled N Khasawneh, Houman Homayoun
 IEEE Micro, 43(5), 35-44.
8. **HeteroScore: Evaluating and Mitigating Cloud Security Threats Brought by Heterogeneity**
Chongzhou Fang, Najmeh Nazari, Behnam Omid, Han Wang, Aditya Puri, Manish Arora, Setareh Rafatirad, Houman Homayoun, Khaled N Khasawneh
 Network and Distributed System Security Symposium (NDSS) 2023.
9. **Reptack: Exploiting Cloud Schedulers to Guide Co-Location Attacks**
Chongzhou Fang, Han Wang, Najmeh Nazari, Behnam Omid, Avesta Sasan, Khaled N Khasawneh, Setareh Rafatirad, Houman Homayoun
 Network and Distributed System Security Symposium (NDSS) 2022.

Teaching and Mentoring

- **ECS 152A: Computer Networks** UC Davis
Teaching Assistant Winter 2022 & Winter 2024
 - Deliver a 50-min lecture every week and host office hour Q&A sessions.
- **EEC 170: Computer Architecture** UC Davis
Teaching Assistant Fall 2023
 - Provide lab assignment benchmarks and host office hour Q&A sessions.
- **EEC 172: Embedded Systems** UC Davis
Teaching Assistant Winter 2021 & Spring 2021
 - Teach lab sessions and hosting office hour Q&A sessions.
- **EEC 193B: Internet of Things Project** UC Davis
Teaching Assistant Spring 2022
 - Design lab projects and teach lab sessions.
- **EEC 001: Introduction To Electrical And Computer Engineering** UC Davis
Teaching Assistant Fall 2021
 - Teach lab sessions and host office hour Q&A sessions.
- **Research Mentorship:**
 - Wei Shao, PhD Student at UC Davis, with Prof. Houman Homayoun
 - Ning Miao, PhD Student at UC Davis, with Prof. Houman Homayoun

- Farhad Alemi, PhD Student at UC Davis, with Prof. Houman Homayoun and Prof. Setareh Rafatirad
- Jialin Liu, PhD Student at Temple University, with Prof. Han Wang
- Jiacheng Zhou, MSc Student at UC Davis, with Prof. Houman Homayoun
- Jiawei Liu, MSc Student at UC Davis, with Prof. Houman Homayoun
- Wenjun Tu, MSc Student at UC Davis, with Prof. Houman Homayoun
- Shaurya Srivastav, Undergraduate Student at UC Davis, with Prof. Houman Homayoun
- Jinsi Guo, Undergraduate Student at UC Davis, with Prof. Houman Homayoun
- Aditya Puri, High School Student at Foothill High School (Pleasanton, CA), with Prof. Houman Homayoun and Dr. Manish Arora

Presentations

- **Large Language Models for Code Analysis: Do LLMs Really Do Their Job?**
at Usenix Security Symposium, Philadelphia, PA, Aug. 14, 2024.
- **Gotcha! I Know What You are Doing on the FPGA Cloud: Fingerprinting Co-Located Cloud FPGA Accelerators via Measuring Communication Links**
at ACM Conference on Computer and Communications Security (CCS), Copenhagen, Denmark, Nov. 28, 2023.
- **HeteroScore: Evaluating and Mitigating Cloud Security Threats Brought by Heterogeneity**
at Network and Distributed System Security Symposium (NDSS), San Diego, CA, Mar. 2, 2023.
- **Reptack: Exploiting Cloud Schedulers to Guide Co-Location Attacks**
at Network and Distributed System Security Symposium (NDSS), San Diego, CA, Apr. 26, 2022.

Awards and Grants

- ACM CCS Student Travel Grant, 2023.

Grant Writing Experience:

- Google Cloud Research Credits, 2023.
- Fingerprinting FPGA Circuits Using Communication Interfaces, NSF CHEST, 2022.