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Hongbo Chen

Research Interests

My research mainly focuses on system security, especially focusing on confidential computing, language-based security, and software verification. I'm also interested in cloud security and cybercrime.

Education

Indiana University — Bloomington, Indiana
Ph.D. in Computer Science — 2019–Present

- Advisor: XiaoFeng Wang
- Student under NSF Center for Distributed Confidential Computing (CDCC)

Xi'an Jiaotong University — Xi'an, China
B.S. Electrical Engineering — 2012–2018

- Honor's Youth Program: 2 Yrs preparatory course without high school + 4 Yrs undergraduate

Experience

Baidu USA — Sunnyvale, California
Research Intern on Security — Summer 2021

- Apache Teaclave: open source FaaS platform for confidential computing

Baidu USA — Sunnyvale, California
Research Intern on Security — Spring 2022

- Proof of Being Forgotten: a new privacy protection principle for confidential computing

Apache Software Foundation — United States
Committer of Incubator Teaclave; Contributer of TVM — Since Summer 2021

National University of Singapore — Singapore
Exchange Student — Summer 2017

Skills & Courses

- **Programming Languages**: Rust, Python, C, Assembly, Coq
- **System Courses**: Networks, Operating Systems, Malware Analysis
- **Theory & PL Courses**: Programming Language, Compiler, Logical Foundations, Computing Theory
- **Other Courses**: Maching Learning, Data Mining, Neuroscience

Teaching

- **Advisor** at Luddy School, Indiana University — Fall 2021
  Undergraduate Research Project
- **Advisor** at CDCC Summer Internship Project, Indiana University — Summer 2023
  Undergraduate Research Project

- **Mentor** of Google Summer of Code — Summer 2023
  Project: Incubator Teaclave

Honors and Awards

- S&P'22 Student Travel Grant — 2022
- HackIN Hackathon (Hardware Reverse Engineering CTF), 1st & 3rd Place — 2019, 2021
- Information Security Triathlon Competition (CTF), 3rd Prize — 2017
- XJTU "Internet+" Entrepreneurship Contest, Bronze Prize — 2016
- "Network Security Venus Cup" Knowledge Contest, 1st Place — 2016
- XJTU Springsoft Scholarship, three consecutive years — 2014–2016
- XJTU Activist of Public Activity, three consecutive years — 2015–2017

Activities & Services

- **External Reviewer** of Academic Conferences
  MedAI'23, S&P'22, Security'22, SEED'22, NDSS'21, CCS'20
- **Reviewer** of IDASH Privacy and Security Workshop — 2020–2022
- **Founder & Chair** of Network Security Club at XJTU — 2016–2017

Publications

[1] **H. Chen**, H. H. Chen, M. Sun, K. Li, Z. Chen, and X. Wang, "A verified confidential computing as a service framework for privacy preservation", in *32nd USENIX Security Symposium (USENIX Security 23)*, 2023.

[2] T.-T. Kuo, X. Jiang, H. Tang, X. Wang, A. Harmanci, M. Kim, K. Post, D. Bu, T. Bath, J. Kim, W. Liu, **H. Chen**, and L. Ohno-Machado, "The evolving privacy and security concerns for genomic data analysis and sharing as observed from the idash competition", *Journal of the American Medical Informatics Association*, vol. 29, no. 12, pp. 2182–2190, 2022.

[3] Z. Li, W. Liu, **H. Chen**, X. Wang, X. Liao, L. Xing, M. Zha, H. Jin, and D. Zou, "Robbery on devops: Understanding and mitigating illicit cryptomining on continuous integration service platforms", in *2022 2022 IEEE Symposium on Security and Privacy (SP)*, Los Alamitos, CA, USA: IEEE Computer Society, May 2022, pp. 363–378.

[4] **H. Chen**, W. Liu, X. Wang, Z. Li, D. Zhang, W. Wang, and H. Tang, "Understanding tee containers, easy to use? hard to trust", *arXiv preprint arXiv:2109.01923*, 2021.

[5] W. Liu, W. Wang, **H. Chen**, X. Wang, Y. Lu, K. Chen, X. Wang, Q. Shen, Y. Chen, and H. Tang, "Practical and efficient in-enclave verification of privacy compliance", in *2021 51st Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, IEEE, 2021, pp. 413–425.

[6] W. Wang, W. Liu, **H. Chen**, X. Wang, H. Tian, and D. Lin, "Trust beyond border: Lightweight, verifiable user isolation for protecting in-enclave services", *IEEE Transactions on Dependable and Secure Computing*, 2021.

[7] C. Widanage, W. Liu, J. Li, **H. Chen**, X. Wang, H. Tang, and J. Fox, "Hysec-flow: Privacy-preserving genomic computing with sgx-based big-data analytics framework", in *2021 IEEE 14th International Conference on Cloud Computing (CLOUD)*, IEEE, 2021, pp. 733–743.