

Jilin Hu

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1999-08

EDUCATION

University of Illinois Urbana-Champaign

Sep 2024 - Sep 2025

Visiting Scholar in Computer Science

Advisor: Talia Ringer

Zhejiang University

Sep 2021 - Jun 2026

Ph.D. (expected Jun 2026) in Computer Science

Hangzhou, China

Advisor: Yongwang Zhao

Xi'an Jiaotong University

Sep 2017 - Jun 2021

B.S. in Physics (Honors Program)

Xi'an, China

INTERESTS

Formal verification, Automatic theorem proving, Large language models, Proof synthesis, Operating systems, Specification synthesis, Trusted Execution Environment.

RESEARCH PUBLICATIONS

Jilin Hu, Fanlang Zeng, Yongwang Zhao, Zhuoruo Zhang, Leping Zhang, Jianhong Zhao, Rui Chang, Kui Ren, "*ProveriT: A Parameterized, Composable, and Verified Model of TEE Protection Profile*," in IEEE Transactions on Dependable and Secure Computing, doi: 10.1109/TDSC.2024.3375311.

I focused on the correctness of the GlobalPlatform protection profile of the TEE. I used Isabelle/HOL to formally specify it and prove its rationale. I also reported bugs which are confirmed by GlobalPlatform.

Zhuoruo Zhang, **Jilin Hu**, Chenyang Yu, Rui Chang and Yongwang Zhao, "*VeriReach: A Formally Verified Algorithm for Reachability Analysis in Virtual Private Cloud Networks*," 2023 IEEE International Conference on Web Services (ICWS), Chicago, IL, USA, 2023, pp. 71-77, doi: 10.1109/ICWS60048.2023.00022.

I verified a reachability analysis algorithm on the Huawei virtual private cloud using Isabelle. I also used Tamarin to verify a small protocol.

Jilin Hu, Yongwang Zhao, "*Tacco: A Framework for Ensuring the Security of Real-World TEEs via Formal Verification*" (under review)

PROFESSIONAL EXPERIENCES

Research assistant, University of Illinois Urbana Champaign, U.S.

Jan 2024

- I am currently working on LLM for Formal methods. I focus on using large language models to automatically generate the specification in Isabelle.
- I also do research on automatic theorem proving. Specifically, I use LLM to aid the proof synthesis in Isabelle to mitigate the proof burden.

Project leader, Zhejiang University, China

Dec 2022 - Dec 2023

- I led some master's students in formally specifying and verifying a commercial TEE from Xiaomi Corporation.
- We used Isabelle/HOL to ensure its information-flow property and assisted Xiaomi in requiring the CC EAL 5+ certificate.

Research assistant, Xi'an Jiaotong University, China

Feb 2019 - Jul 2019

- I worked with the AI Security lab advised by Professor Chao Shen. I focused on model stealing using the neural network's decision boundaries.

SKILLS LIST

English: I went to Michigan State University as an exchange student. I can communicate with people fluently.

Programming Language: I use Isabelle and Python fluently. I also use C/C++.