

You Li

Northwestern University
Department of Electrical and Computer Engineering
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- Current Position** NORTHWESTERN UNIVERSITY *Evanston, IL*
9/23 - present. Postdoctoral Scholar.
Advisor: Prof. Hai Zhou.
- Education** NORTHWESTERN UNIVERSITY *Evanston, IL*
Ph.D. in Computer Engineering, August, 2023.
Dissertation Title: “Enhancing Safety and Robustness for Mission-critical Systems with Formal Methods”.
Advisor: Prof. Hai Zhou.
Co-supervised by Prof. Yan Chen.
- NORTHWESTERN UNIVERSITY *Evanston, IL*
M.S. in Computer Engineering, August, 2018.
- SHANGHAI JIAO TONG UNIVERSITY *Shanghai, China*
B.E. in Electrical and Computer Engineering, August, 2016.
Advisor: Prof. Weikang Qian.
- Research Interests**
- Theoretical foundations of symbolic model checking.
 - Formal verification in VLSI design automation.
 - Hardware security and trust.
 - Security analysis for AI and network systems.
- Experience** META INC. *Menlo Park, CA*
06/20-09/20. Software Engineer Intern, Ads Ranking, AutoML infrastructure.
- SYNOPSYS INC. *Mountain View, CA*
06/17-09/17. R&D Intern, Verification Group.
Director: Dr. William Hung.
- NORTHWESTERN UNIVERSITY *Evanston, IL*
09/17-08/23. Research Assistant & Teaching Assistant, Department of Electrical and Computer Engineering, Department of Computer Science.
- Honors and Rewards**
- Finalist of NSFC Overseas Outstanding Young Scholar Award, 2024.
 - Pati Damoder and Soumitri Reddy Graduate Fellowship, 2021.
 - Huawei “Genius Youth”, Level 2, 2021.
 - 9th Place, ACM-ICPC Mid-Central USA Regional, 2017.
 - Walter Murphy and Royal Cabell Graduate Fellowship, 2016.

Teaching

NORTHWESTERN UNIVERSITY
Teaching Assistant.

Evanston, IL

- CE 357: Introduction to VLSI CAD, Winter 2023.
- CE 329: The Art of Multicore Concurrent Programming, Spring 2021.
- CE 203: Intro to Computer Engineering, Winter 2021, Spring 2020, Winter 2017.
- CS 496: Mathematical Foundations of Machine Learning, Winter 2020.
- CE 303: Advanced Digital Design, Fall 2020.
- EE/CE 334: Fundamentals of Blockchains and Decentralization, Fall 2018.
- GE 205: Engineering Analysis 1, Fall 2017.

Grader.

- GE 205: Engineering Analysis 1, Fall 2020.
- CE 356: Introduction to Formal Specification & Verification, Winter 2017.

Professional Activities

Session Chair, *ACM/IEEE Design Automation Conference (DAC)*, 2025.
Member of Technical Program Committee, *Student Research Competition (SRC)*,
IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2024.
Reviewer, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*.
Reviewer, *ACM Transactions on Design Automation of Electronic Systems (TODAES)*.
Reviewer, *IEEE Transactions on Information Forensics and Security (TIFS)*.

Peer-reviewed Conference Papers

- [C14] Y. Li, G. Zhao, Y. He, H. Zhou. RE3: Finding Refinement Relations with Relational Mapping Abstraction. In *ACM/IEEE Design Automation Conference (DAC, CCF-A)*, 2025.
- [C13] Y. Li, G. Zhao, Y. He, H. Zhou. DE2: SAT-based Sequential Logic Decryption with a Functional Description. In *Design, Automation & Test in Europe Conference & Exhibition (DATE, CCF-B)*, 2025.
- [C12] Y. He, J. Liu, L. Cai, Y. Li, T. Cui, H. Zhou. Multimodal Bayesian Networks for Automatic Skin Disease Diagnosis. In *IEEE International Conference on Bioinformatics and Biomedicine (BIBM, CCF-B)*, 2024.
- [C11] Y. Li, G. Zhao, Y. He, H. Zhou. Evaluating the Security of Logic Locking on Deep Neural Networks. In *ACM/IEEE Design Automation Conference (DAC, CCF-A)*, 2024.
- [C10] Y. Li, K. Hou, Y. He, Y. Chen, H. Zhou. Property Guided Secure Configuration Space Search. In *Information Security Conference (ISC, CCF-C)*, 2024.
- [C9] Y. Li, G. Zhao, Y. He, H. Zhou. SE3: Sequential Equivalence Checking for Non-Cycle-Accurate Design Transformations. In *ACM/IEEE Design Automation Conference (DAC, CCF-A)*, 2023.
- [C8] Y. Li, G. Zhao, Y. He, H. Zhou. ObfusLock: An Efficient Obfuscated Locking Framework for Circuit IP Protection. In *Design, Automation & Test in Europe Conference & Exhibition (DATE, CCF-B)*, 2023.
- [C7] Y. He, L. Cai, T. Cui, Y. Li, H. Zhou. A Combination of DNN and BN for Automatic Skin Disease Diagnosis. In *International Symposium on Biomedical Imaging (ISBI)*, 2023.

- [C6] K. Hou, Y. Li, Y. Yu, Y. Chen, H. Zhou. Discovering Emergency Call Pitfalls for Cellular Networks with Formal Methods. In *International Conference on Mobile Systems, Applications, and Services (MobiSys, CCF-B)*, 2021. (co-first author)
- [C5] Y. Li, K. Hou, H. Zhou, Y. Chen. Network Protocol Safe Configuration Search in One Shot. In *Proceedings of the ACM SIGCOMM Conference Posters and Demos, CCF-A*, 2020.
- [C4] Y. Yu, Y. Li, K. Hou, Y. Chen, H. Zhou, J. Yang. CellScope: Automatically Specifying and Verifying Cellular Network Protocols. In *Proceedings of the ACM SIGCOMM Conference Posters and Demos, CCF-A*, 2019.
- [C3] Y. Shen, Y. Li, S. Kong, A. Rezaei, H. Zhou. SigAttack: New High-level SAT-based Attack on Logic Encryptions. In *Design, Automation & Test in Europe Conference & Exhibition (DATE, CCF-B)*, 2019.
- [C2] A. Rezaei, Y. Li, Y. Shen, S. Kong, H. Zhou. CycSAT-Unresolvable Cyclic Logic Encryption Using Unreachable States. In *Asia and South Pacific Design Automation Conference (ASP-DAC, CCF-C)*, 2019.
- [C1] Y. Shen, Y. Li, A. Rezaei, S. Kong, D. Dlott, H. Zhou. BeSAT: Behavioral SAT-based Attack on Cyclic Logic Encryption. In *Asia and South Pacific Design Automation Conference (ASP-DAC, CCF-C)*, 2019.

**Peer-reviewed
Journal
Papers**

- [J2] X. Leng, K. Hou, Y. Chen, K. Bu, L. Song, Y. Li. A Lightweight Policy Enforcement System for Resource Protection and Management in the SDN-based Cloud. In *Computer Networks (CCF-B)*, 161, pp. 68-81, October 2019.
- [J1] Y. Wu, Y. Li, X. Ge, Y. Gao, W. Qian. An Efficient Method for Calculating the Error Statistics of Block-based Approximate Adders. In *IEEE Transactions on Computers (TC, CCF-A)*, 68(1), pp. 21-38, January 2019. (co-first author)

**Invited
Talks**

- [T4] 6/24. “Formal Verification for LLM-generated Designs”, at *Fudan University*. Host: Prof. Fan Yang & Prof. Li Shang.
- [T3] 6/21. “Parameter Synthesis with Symbolic Model Checking”, at *Shanghai University of Finance and Economics*. Host: Prof. Pinyan Lu.
- [T2] 4/21. “Security Aspects of Artificial Intelligence”, at *California State University Long Beach*. Host: Prof. Amin Rezaei.
- [T1] 12/20. “Formal Verification for Deep Neural Networks”, at *California State University Long Beach*. Host: Prof. Amin Rezaei.