Yibo Liu

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 34r7hm4n   Google Scholar

EDUCATION

- **Arizona State University**   Tempe, AZ
  PhD student in Computer Science, advised by Dr. Ruoyu Wang   *August 2023 – Present*

- **Sichuan University**   Chengdu, China
  Bachelor in Cybersecurity   *September 2019 – June 2023*

RESEARCH INTERESTS

- Decompilation
- Binary Analysis
- LLM for Security
- Vulnerability Discovery

EXPERIENCE

- **Shellphish**   Tempe, AZ
  Team Member, Reverse Engineering   *August 2023 - Present*
    - Participated as a reverse engineer in international CTF competitions, including the DEF CON CTF Finals.

- **Chinese University of Hong Kong**   Hong Kong SAR, China
  Research Assistant, advised by Dr. Sze Yiu Chau   *August 2022 – December 2022*
    - Studied security-critical API misuses in firmware and their implications for software security.
    - Evaluated state-of-the-art static analysis tools and identified significant inaccuracies and usability limitations.
    - Analyzed root causes of incorrect reports and co-authored *Towards Precise Reporting of Cryptographic Misuses* (NDSS 2024, second author).

- **0x401 Team**   Chengdu, China
  Team Member, Reverse Engineering   *October 2020 - June 2023*
    - Participated as a reverse engineer in regional and national CTF competitions.

PROJECTS

- **Oxidizer**
  A Rust-oriented Decompiler   *December 2023 - Present*
    - Conducted an empirical study of Rust-specific decompilation challenges when applying state-of-the-art C decompilers to Rust binaries, and identified key language- and compiler-induced obstacles.
    - Designed a novel Rust decompilation pipeline and implemented multiple techniques to address these challenges, providing a foundation for future improvements and extensions.

- **Pluto**   bluesadi/Pluto
  An obfuscator based on LLVM   *June 2021 - January 2024*
    - Pluto converts the source code into a functionally equivalent but much more complicated form at compile-time, protecting your software from being cracked.
    - **Data Obfuscaton**: Substitution, String Encryption, Mixed Boolean-Arithmetic Obfuscation
    - **Control Flow Obfuscaton**: Flattening, Bogus Control Flow, Indirect Call Obfuscation

SKILLS

- **Programming Languages**: C/C++, Java, Python, Kotlin, Rust

- **Security Skills**: Decompilation, Reverse Engineering, Program & Binary Analysis; practical experience using tools such as angr and LLVM to solve real-world security problems

Publications

- **Oxidizer: Toward Concise and High-fidelity Rust Decompilation**.
  Yibo Liu, Zion Leonahenahe Basque, Arvind S. Raj, Chavin Udomwongsa, Chang Zhu, Jie Hu, Changyu Zhao, Fangzhou Dong, Adam Doupé, Tiffany Bao, Yan Shoshitaishvili, Ruoyu Wang.
  IEEE Symposium on Security and Privacy (S&P), 2026. (To appear)

- **BuildBench: Benchmarking LLM Agents on Compiling Real-World Open-Source Software**.
  Zehua Zhang, Ati Priya Bajaj, Divij Handa, Siyu Liu, Arvind S. Raj, Hongkai Chen, Hulin Wang, **Yibo Liu**, Zion Basque, Souradip Nath, Vishal Juneja, Nikhil Chapre, Yan Shoshitaishvili, Adam Doupé, Chitta Baral, Ruoyu Wang.
  arXiv preprint, 2025.

- **TYGR: Type Inference on Stripped Binaries using Graph Neural Networks**.
  Chang Zhu*, Ziyang Li*, Anton Xue, Ati Priya Bajaj, Wil Gibbs, **Yibo Liu**, Rajeev Alur, Tiffany Bao, Hanjun Dai, Adam Doupé, Mayur Naik, Yan Shoshitaishvili, Ruoyu Wang, Aravind Machiry.
  33rd USENIX Security Symposium (USENIX Security), 2024.
  (* equal contribution)

- **Fuzz to the Future: Uncovering Occluded Future Vulnerabilities via Robust Fuzzing**.
  Arvind S. Raj, Wil Gibbs, Fangzhou Dong, Jayakrishna Menon Vadayath, Michael Tompkins, Steven Wirsz, **Yibo Liu**, Zhenghao Hu, Chang Zhu, Gokulkrishna Praveen Menon, Brendan Dolan-Gavitt, Adam Doupé, Ruoyu Wang, Yan Shoshitaishvili, Tiffany Bao.
  ACM SIGSAC Conference on Computer and Communications Security (CCS), 2024.

- **Towards Precise Reporting of Cryptographic Misuses**.
  Yuchen Chen, **Yibo Liu**, Kaiyuan Wu, Duc Van Le, Sze Yiu Chau.
  Network and Distributed System Security Symposium (NDSS), 2024.