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Zhibo Liu

PhD Student

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I am currently a PhD year 3 student at Department of Computer Science and Engineering, Hong Kong University of Science and Technology, supervised by Prof. Shuai Wang.
Before joining HKUST, I received my B.Eng. degree from Nankai University, Tianjin, China in 2019.
My research currently focuses on **Reverse Engineering**, my research interests include **Computer Security** and **Software Engineering**.

EDUCATION

Ph.D., Hong Kong University of Science and Technology 09 2019 — now
Bachelor of Engineering, Nankai University 09 2015 — 06 2019

ACADEMIC PROJECTS

DNN Executable Decompilation 01 2021 — now

- We try to decompile DNN executables compiled by DNN compilers using trace-based symbolic execution.

Lifter Benchmarking 04 2020 — 04 2021

- We quantitatively evaluate performance of LLVM IR lifters on supporting downstream applications including pointer analysis, binary similarity analysis and decompilation.

Decompiler Testing 01 2019 — 03 2020

- We design a framework to automatically find errors and defects in modern decompilers including commercial decompiler and open-source decompiler developed by NSA.

PUBLICATIONS

1. Liu, Z., Yuan, Y., Wang, S. & Bao, Y. *SoK: Demystifying Binary Lifters Through the Lens of Downstream Applications* in *2022 IEEE Symposium on Security and Privacy (SP)(SP)*. IEEE Computer Society, Los Alamitos, CA, USA (2022), 453–472.
2. Xiao, D., LIU, Z., Yuan, Y., Pang, Q. & Wang, S. *Metamorphic Testing of Deep Learning Compilers*. *Proceedings of the ACM on Measurement and Analysis of Computing Systems* **6**, 1–28 (2022).
3. Ma, P., Liu, Z., Yuan, Y. & Wang, S. *NeuralD: Detecting Indistinguishability Violations of Oblivious RAM with Neural Distinguishers*. *IEEE Transactions on Information Forensics and Security* (2022).
4. Wang, H. *et al.* *Enhancing DNN-Based Binary Code Function Search With Low-Cost Equivalence Checking*. *IEEE Transactions on Software Engineering* (2022).
5. Liu, Z. & Wang, S. *How Far We Have Come: Testing Decompilation Correctness of C Decompilers* in *Proceedings of the 29th ACM SIGSOFT International Symposium on Software Testing and Analysis* (Association for Computing Machinery, Virtual Event, USA, 2020), 475–487. ISBN: 9781450380089. <https://doi.org/10.1145/3395363.3397370>.

AWARDS & HONORS

2019 China National Cyber Security Scholarship
2019 CISCN CTF Contest, group second class prize
2018 CISCN CTF Contest, group second class prize
2017 ACM/ICPC Asia Regional Urumqi Site Bronze Medal

PROFESSIONAL SERVICE

WiSec	2022	Artifact Evaluation track, reviewer
NDSS BAR workshop	2022	External reviewer
CCS	2022	External reviewer
ASIACCS	2022	External reviewer
ICICS	2020	External reviewer
TIFS	2020	External reviewer
ICSE	2020	Artifact Evaluation track, external reviewer
ICSE SEIP track	2020	External reviewer
ICICS	2019	External reviewer
SOSP	2019	Artifact Evaluation track, external reviewer

TECHNICAL SKILLS

Other Skills Reverse Engineering, Vulnerability Exploitation
Programming/Scripting Python, Java, C/C++, Assembly