Minho Kim

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RESEARCH INTERESTS

Malware analysis; Vulnerability analysis; Binary obfuscation and deobfuscation; Program analysis for reverse engineering
Binary similarity analysis; Compiler and Large Language Model (LLM) based research for binary analysis

EDUCATION

Ph.D., Computer Science and Engineering **Mar 2022 - Present**
Soongsil University, Seoul, Korea

M.S., Computer Science and Engineering **Feb 2022**
Soongsil University, Seoul, Korea

- Thesis: Large-scale Analysis on Anti-Analysis Techniques in Malware

B.S., Electronic Engineering **Feb 2020**
Soongsil University, Seoul, Korea

PUBLICATIONS

[1] **Minho Kim**, Haehyun Cho, and Jeong Hyun Yi, "Large-scale analysis on anti-analysis techniques in real-world malware," *IEEE access*, vol. 10, pp. 75 802–75 815, 2022
[2] **Minho Kim**, Jeong Hyun Yi, and Haehyun Cho, "De-obfuscated scheme for obfuscation techniques based on trampoline code," *Journal of The Korea Institute of Information Security & Cryptology*, vol. 33, no. 6, pp. 1043–1053, 2023
[3] Gwangyeol Lee, **Minho Kim**, Jeong Hyun Yi, and Haehyun Cho, "Pinicorn: Towards automated dynamic analysis for unpacking 32-bit pe malware," *Electronics*, vol. 13, no. 11, p. 2081, 2024

WORKSHOP & POSTER PRESENTATAION

[1] **Minho Kim**, Haehyun Cho, and Jeong Hyun Yi, "Automated deobfuscation system for themida api wrapping," In: Oral Session at *Conference on Information Security & Cryptology Summer*, 2021
[2] **Minho Kim**, Gwangyeol Lee, Haehyun Cho, and Jeong Hyun Yi, "Api-hooking based data flow tracking for anti-analysis technique detection," In: Oral Session at *Conference on Information Security & Cryptology Winter*, 2021
[3] **Minho Kim**, Haehyun Cho, and Jeong Hyun Yi, "Measuring anti-analysis techniques in malware," In: Oral Session at *The 5th International Symposium on Mobile Internet Security*, 2021
[4] Gwangyeol Lee, **Minho Kim**, Haehyun Cho, and Jeong Hyun Yi, "Automated deobfuscation system based on unicorn engine," In: Oral Session at *Conference on Information Security & Cryptology Winter*, 2022
[5] **Minho Kim**, Gwangyeol Lee, Haehyun Cho, and Jeong Hyun Yi, "Automated dynamic analysis scheme for unpacking malware," In: Oral Session at *The 6th International Symposium on Mobile Internet Security*, 2022
[6] Gwangyeol Lee, **Minho Kim**, Haehyun Cho, and Jeong Hyun Yi, "Deobfuscated scheme for obfuscation techniques based on trampoline code," In: Oral Session at *Conference on Information Security & Cryptology Summer*, 2023

[7] Gwangyeol Lee, **Minho Kim**, Jeong Hyun Yi, and Haehyun Cho, "Research on oep and api de-obfuscation methods for unpacking," In: Oral Session at *Conference on Information Security & Cryptology Winter*, 2023

[8] **Minho Kim**, Gwangyeol Lee, Haehyun Cho, and Jeong Hyun Yi, "De-obfuscation system for obfuscation techniques based on trampoline code," In: Poster Session at *The 7th International Symposium on Mobile Internet Security*, 2023

RESEARCH PROJECTS

INSTITUTE FOR INFORMATION & COMMUNICATION TECHNOLOGY PLANNING & EVALUATION (IITP): *Mar 2019 – Present*

Automatic Deep Malware Analysis Technology for Cyber Threat Intelligence

- PI: Professor Jeong Hyun Yi
- This project aims to develop a Deep Malware automatic analysis system capable of bypassing anti-analysis techniques and proactively detecting and preventing unknown malware without human intervention.

INSTITUTE FOR INFORMATION & COMMUNICATION TECHNOLOGY PLANNING & EVALUATION (IITP): *Apr 2024 – Present*

Generative AI based Binary Deobfuscation Technology and Its Evaluation Metrics

- PI: Professor Jeong Hyun Yi
- This project aims to develop a generative AI-based binary deobfuscation technology to effectively analyze advanced malware by countering sophisticated obfuscation and anti-analysis techniques.

HONORS AND AWARDS

The National Security Research (NSR) Institute Award

- for the NSR Best Student Paper at the MobiSec 2022, Dec 2022.

The Korea Institute of Information Security and Cryptology (KIISC) Award

- for the Best Paper at the CISC-S 2023, June 2023.
- for the Best Paper at the CISC-W 2023, Dec 2023.

EXPERIENCE SUMMARY

Cyber Security Research Center **Mar 2019 - Present**

Soongsil University, Seoul, Korea

TEACHING EXPERIENCE

Teaching Assistant

- System Security Principles, Samsung Electronics, 2022
- Network Security Principles, Samsung Electronics, 2022
- System Security Principles, Samsung Electronics, 2023