Younggi Park

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Research Interests

Program synthesis, program verification, programming language, system security

Education

Korea University Sep 2019 – Aug 2022
- Master of Engineering in Information Security (part-time) Seoul, Korea
- Total GPA of 4.13 / 4.5
- Advisor: Prof. Huy Kang Kim

Korea University Mar 2014 – Feb 2018
- Bachelor of Engineering in Cyber Defense Seoul, Korea
- Total GPA of 3.9 / 4.5

Publications

- **Younggi Park**, Hwiwon Lee, Jinho Jung, Hyungjoon Koo, and Huy Kang Kim.
  BENZENE: A Practical Root Cause Analysis System with an Under-Constrained State Mutation.
  In Proceedings of the 2024 IEEE Symposium on Security and Privacy (S&P). **Distinguished Paper Award**
- Jione Choi, Hwiwon Lee, **Younggi Park**, Huy Kang Kim, Junghee Lee, Youngjae Kim, Gyuho Lee, Shin-Woo Shim, and Taekyu Kim.
  PhantomFS-v2: Dare you to avoid this trap.
  In IEEE Access 8 (2020).

Selected Awards and Honors

Distinguished Paper Award – 2024 IEEE Symposium on Security and Privacy May 2024
- Recognized as Top 1% (9 papers) of 1,463 total submissions

Letter of Appreciation – The Special U.S. Liaison Advisor Korea (SUSLAK), The U.S. Military Dec 2023
- Represents special thanks for sharing technical expertise in program analysis and security

Top 1st Excellence – Officer's Basic Leadership Training, Repulic of Korea Army July 2018

Dean's List – Korea University 1st Semester, 2016

Research Experience

AIxCC Competition, DARPA ( ) May 2024 - Aug 2025

Team Illinoise (Semi-final), Team Atlanta (Final)
- Joined Team Atlanta (led by Prof. Taesoo Kim) for the final competition
- Conducted research that generates buggy testcases by combining program analysis and prompt engineering
- Currently in charge of enhancing concolic execution targeting compiled binary executables

Automated Root Cause Analysis of Discovered Bugs ( ) Sep 2021 - May 2023

Independent Research, Korea University (with Prof. Huy Kang Kim and Prof. Hyungjoon Koo)
- Designed an automated reasoning system to locate blamed code for software crashes (**IEEE S&P 2024**)
- Proposed a novel dataset generation technique by directly modifying program states during execution
- Developed a data flow analysis engine for compiled binaries using binary instrumentation tools
- Devised program behavior prioritization method for mitigating the performance overhead
- Evaluated our system on 60 real-world bugs on popular open-source projects, showing 2× more precise and 4× faster performance

Intrusion Detection with Hidden Interfaces of Linux Filesystem Mar 2019 - Sep 2020

Korea University (with Prof. Huy Kang Kim and Prof. Junghee Lee)

- Tested the robustness of proposed filesystem against malicious users (published at **IEEE Access 2020**)
- Systemized possible attack scenarios and performed actual attacks on the proposed system

Work Experience

Republic of Korea Army May 2018 – May 2025

Officer (Captain) Korea

- Promoted to captain in Dec 2021 (scheduled discharge in May 2025)
- Dispatched to research-focused institutions during service

Defense Security Agency Aug 2023 – May 2025

Offensive Security Researcher Korea

- The Defense Security Agency is an intelligence command for SIGINT (Signals Intelligence), which is equivalent to the U.S. National Security Agency (NSA)
- Conducted research on security for Linux-based systems such as Android

Agency for Defense Development (ADD) (🏠) July 2018 – July 2023

System Security Researcher Korea

- The ADD is a government research institution focused on Korean military
- Researched methods to enhance security for allied computer systems and networks

Work Projects

International Cooperation with the U.S. Military (SUSLAK) Oct 2023 - Dec 2023

Defense Security Agency Korea

- Led a program analysis team specialized in Linux-based systems like Android
- Demonstrated a novel technique that bypasses chipset-based protection of the Android kernel
- Successfully emphasized the potential threats to allied network and computer systems

Research on National-Scale Cyber Attack Defenses Mar 2021 - Sep 2022

Agency for Defense Development (ADD) Korea

- Researched defense strategies against hacking groups targeting military and government systems
- Developed anti-virus agent programs and management servers that block malicious code
- Implemented Windows kernel drivers to detect activities that affect system's security

Research on Software Fuzzing Result Evaluation Feb 2019 - Sep 2020

Agency for Defense Development (ADD) Korea

- Developed the automated system that assesses the exploitability (severity) of found bugs
- Led the program analysis team, implementing dynamic taint analysis-based key components
- A patent acquired for designing a method that identifies blamed functions for bugs

Research on Cyber-Electronic Warfare Aug 2018 - Feb 2019

Agency for Defense Development (ADD) Korea

- Demonstrated cyber attacks on an actual weapon system for the first time in our military
- Found vulnerabilities that can arbitrarily control communication systems of allied weapons

Technical Skills

Skills: Data flow analysis, taint analysis, concolic/symbolic execution, reverse engineering, fuzzing, vulnerability analysis, prompt engineering

Languages: C/C++, Python, PHP, SQL, assembly languages (Intel x86/64, ARM), Latex

Platforms: Linux kernel, embedded systems, Real-Time OS (RTOS)