Younggi Park

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Research Interests

Program synthesis, software engineering, verification, programming language, system security

Education

Korea University Sep 2019 – Aug 2022
- Master of Engineering in Information Security Seoul, Korea
- Total GPA of 3.63 / 4.00
- Thesis: "*An Efficient Approach to Automated Root Cause Analysis for a Software Crash*" (advisor: Prof. Huy Kang Kim)

Korea University Mar 2014 – Feb 2018
- Bachelor of Engineering in Cyber Defense Seoul, Korea
- Total GPA of 3.40 / 4.00

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).
- 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).

Awards and Honors

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

Letter of Appreciation – SUSLAK, National Security Agency (NSA), U.S. 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

Certificate of Appreciation – Bluehole Studio Dec 2017

Mirero Scholarships – Korea University Mar 2017 - Sep 2017

Academic Excellence Award – Korea University Sep 2016

Mirero Scholarships – Korea University Spring 2016

Work Experience

Republic of Korea Army May 2018 – May 2025

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)
- Conducted research on security for Linux-based systems such as Android

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

System Security Researcher Korea

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

Research and Work Projects

AIxCC Competition, DARPA (🏠) May 2024 - Aug 2025

Team Illinoise (Semi-final), Team Atlanta (Final)

- Conducted research that automatically generates buggy testcases by combining code analysis and prompt engineering
- Planned to participate as Team Atlanta (led by Prof. Taesoo Kim) in Final competition

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

Independent Research, Korea University

- Designed an automated reasoning system to locate blamed code for software crashes (consists of 14K C/C++ LoC)
- Proposed a novel dataset generation technique by directly modifying program states during execution
- Implemented a data flow analysis engine using Dynamic Binary Instrumentation (DBI) tools for binary executables

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

Agency for Defense Development (ADD)

- Research on defense strategies against hacking from from cyber crime groups targeting military and government systems.
- Developed anti-virus agent programs and management servers that block malicious code
- Implemented Windows kernel drivers to automatically detect malicious activities

Research on Software Fuzzing Result Evaluation Feb 2019 - Sep 2020

Agency for Defense Development (ADD)

- Developed the automated system that asseses 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)

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

Security Consultation on In-Development Online Game Sep 2016 - Dec 2016

Bluehole Studio (current. KRAFTON)

- Audited robustness of a pre-released RPG game against malicious user actions
- Performed reverse engineering on encrypted programs without source codes
- Reported three security bugs that can severely affect the company's game services

Technical Skills

Skills: Data flow analysis, taint analysis, 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, RTOS.

Language Proficiency

English

- **IBT TOEFL**: 108 (R: 29, L: 28, S:23, W: 28)

Korean (Native)