Hojin Choi

Undergraduate student at Sogang University

CHO1HOJIN
kaler1234@u.sogang.ac.kr

Research Interest

I have interests across a wide range of topics in software engineering and security, including but not limited to:

- **Software security, software testing, fuzzing, static analysis**

Education

Sogang University Seoul, Republic of Korea
Bachelor of Science in Computer Science and Engineering (CGPA: 4.13 / 4.3, Salutatorian) *Expected Graduation: Feb. 2026*

Research Experience

Undergraduate Internship at Information Security Lab Sogang University
Advisor: Prof. Jaeseung Choi *Jan. 2024 - Present*

- Research topic: Fuzz testing on real world smart contracts (Developing from the previous research, **Smartian**)

Remote Internship at System Security Lab Indiana University, Bloomington
Advisor: Prof. Hyungsub Kim *Jan. 2025 - Jun. 2025*

During this internship, I studied system security topics and completed several hands-on assignments. I developed a dynamic analysis tool on **Valgrind** for data-dependency tracking, implemented an **LLVM** ModulePass to build call graphs including indirect calls, and analyzed the **ArduPilot** code base, where I implemented a simple rover control program. Implementation details can be found on my GitHub (link).

Publications

- **H. Choi**, J. Park, and J. Choi, "The Impact of Bug Oracle Implementation on the Effectiveness of Smart Contract Analysis Tools" in *Korea Software Congress (KSC)*, 2024.

Academic Service

Student volunteer
- KIISE SIGPL (Special Interest Group on Programming Languages) Summer School 2025

Honors and Awards

Scholarship from Woon Hae Foundation *₩10,000,000 a year* *2024*
Dean's list *Top 1% GPA honor, Sogang University* *2023*
SW Excellence Scholarship for Freshmen *Sogang University* *2020*
Capstone Design Competition *2nd place, Sogang University* *2025*

Teaching Experience

Introduction to AI Programming *Fall. 2023 - Spring. 2025*
- *Covered basic Python programming and related frameworks*

Personal Projects

Fundamentals of Compiler Configuration *Fall. 2024*

Personal project using C within the course

- Implement the simplified compiler with three phases:
  Type checker, AST-to-IR translator, and IR optimization

Operating System *Fall. 2024*

Personal project using C within the course

- Implement the basic kernel features with PintOS:
  System call, Process scheduling, and Virtual memory

Programming Language *Spring. 2024*

Personal project using F# within the course

- Implement simple programming languages and type checker
  Imperative language, Functional language, and Type checker

System Programming *Spring. 2024*

Personal project using C within the course

- Three independent implementations:
  A simple shell, A concurrent server, and Custom malloc and free

Skills

Programming: C/C++, Python, F#, OCaml, Assembly Language(x86-64)

Languages: Korean (Native), English (TOEFL iBT MyBest score 95/120)