

Hojin Choi

Undergraduate student at Sogang University

 CHO1HOJIN
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RESEARCH INTEREST

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

- **Software Testing, Program Analysis, Software Security, Program Repair**

EDUCATION

Sogang University <ul style="list-style-type: none">• <i>B.S. in Computer Science and Engineering (CGPA: 4.13 / 4.3, 3rd out of 136)</i> <i>(On leaving for 2 years: Mandatory military service)</i>	Mar. 2020 – Feb. 2026 (Expected) <i>Seoul, Republic of Korea</i>
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RESEARCH EXPERIENCE

Undergraduate Internship at Information Security Lab , Sogang University <i>Advisor: Prof. Jaeseung Choi</i> <p>Conducted research on fuzz testing for Ethereum smart contracts, focusing on constraint-aware argument mutation that leverages semantic dependencies between function arguments and persistent state variables. Implemented a novel fuzzer (IConFuzz) and demonstrated improved bug-finding effectiveness compared to existing state-of-the-art tools. This work has been submitted to ACM Transactions on Software Engineering and Methodology (TOSEM) and is currently under review.</p>	Jan. 2024 - Present
Remote Internship at System Security Lab , Indiana University Bloomington <i>Advisor: Prof. Hyungsub Kim</i> <p>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).</p>	Feb. 2025 - Jun. 2025

PUBLICATIONS

1. **H. Choi**, J. Park, and J. Choi. "The Impact of Bug Oracle Implementation on the Effectiveness of Smart Contract Analysis Tools" *Korea Software Congress (KSC)*, 2024.
2. **H. Choi** and J. Choi. "IConFuzz: A Constraint-Aware Argument Mutation for Effective Smart Contract Fuzz Testing" *ACM Transactions on Software Engineering and Methodology (TOSEM)*, under review.

HONORS AND AWARDS

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

ACADEMIC SERVICE

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

TEACHING EXPERIENCE

Introduction to AI Programming <ul style="list-style-type: none">- Covered basic <i>Python</i> programming and related frameworks- Assisting lab sessions and managing assignments	Fall. 2023 - Spring. 2025
Hacking and Information Security <ul style="list-style-type: none">- Assisting course instructor with grading and managing assignments	Fall. 2025

SELECTED ACADEMIC 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 98/120)