Selim Oh

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SUMMARY

Highly motivated B.S. student (exp. Feb 2027) specializing in **Compiler Design, System Security, and Program Analysis**. Demonstrated expertise in low-level systems through full compiler implementation (UC Berkeley CS164) and applied research on **Compiler Introduced Security Bugs (CISB)** using LLVM/Clang.

EDUCATION

Pohang University of Science and Technology(POSTECH)
B.S. in Computer Science and Engineering (expected Feb 2027) *Feb 2022 – Present*
- Relevant Coursework: Computer Architecture (A-), Operating Systems (A-)

University of California, Berkeley
Exchange Student *Jan 2025 – May 2025*
- Completed CS164: Programming Languages and Compilers (taught by Max Willsey).

RESEARCH EXPERIENCE & PROJECTS

Compiler Introduced Security Bugs (CISB) Detection
Undergraduate Research Intern, Computer Security Lab, POSTECH (Advisor: Prof. Seulbae Kim) *Jun 2025 – In progress*
- Investigating Compiler Introduced Security Bugs (CISB), focusing on detection and prevention within LLVM compiler optimization passes.
- Wrote **custom LLVM optimization passes in C++** to enable precise detection of introduced vulnerabilities.
- Designed and implemented automated tooling to identify security vulnerabilities introduced by compiler optimizations, with results supporting a planned submission to Eurosys 2026 Workshop.

Linux Kernel Security Analysis
Undergraduate Research Intern, Computer Security Lab, POSTECH (Advisor: Prof. Seulbae Kim) *Jun 2024 – Dec 2024*
- Conducted system-level experiments by **triggering known vulnerabilities** in the Linux kernel based on literature review, validating analysis techniques and strengthening knowledge of kernel security mechanisms.

Compiler Design and Implementation
Course project, UC Berkeley CS164 *Jan 2025 – May 2025*
- Designed and implemented a complete compiler and interpreter for a LISP-like programming language.
- Covered the full pipeline from parsing and type checking to code generation and optimization.

Collaborative Game Development
Member Project, GPOS Game Development Club, POSTECH *Mar 2022 – Aug 2022*
- Contributed to the development of key UI screens for a student-built game.
- Gained practical experience in collaborative programming and version control (Git).

SKILLS & INTERESTS

Programming
C, C++, OCaml, Python, C#, Rocq(Coq)

Tools
LLVM/Clang, Git, Linux

Topics
Compiler Design, System Security, Program Analysis

SCHOLARSHIPS

Korea-U.S. Student Exchange Program Scholar (Cyber Security Track) Ministry of Trade, Industry & Energy *Nov, 2024*