HYEONGYU KIM

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EDUCATION

Seoul National University   Seoul, Korea
BS Electrical Engineering, minor in Computer Science   Mar 2017 - Feb 2023 (Expected)

Seoul Science High School   Seoul, Korea
High School Deploma   Feb 2014 - Feb 2017

WORK EXPERIENCE

Rebellions inc.   Seoul, Korea
Compiler Engineer Intern   Dec 2021 - Feb 2022

- Develop graph transformation passes, and buffer-related optimization passes for ML accelerator.
- Rewrite TVM-based compile passes to MLIR and introduce llvm-lit and FileCheck based regression test strategy.

Devsisters Corp.   Seoul, Korea
Machine Learning Engineer   Mar 2020 - Feb 2021

- Designed and developed automated game balancing product using reinforcement learning.
- Presented at Reinforcement Learning Korea(RL Korea) about 'making puzzle-game bot using reinforcement learning'.

EstSoft   Seoul, Korea
Software Engineer   Jan 2019 - Feb 2020

- Develop and maintain antivirus software used by 12 million monthly active users.
- Researched, designed, and implemented system-level applications between protection-performance trade-offs.

PROJECTS

Google Summer of Code'21 participant with The LLVM Compiler Infrastructure
https://summerofcode.withgoogle.com/projects/#5886093594984448

- Fixed the miscompilation problem in LLVM IR's optimization using the newly added 'Freeze' instruction.
- Analyzed the change in performance while correcting the LLVM's optimizations and created patches to reduce performance regression.
- While minimizing the performance regression, show that adding noundef attribute to every single function parameter improves runtime performance and object size. Results were shared via the llvm-dev mailing list.
- While fixing miscompilation of loop unswitch optimization, change clang's '-enable-noundef-args' flag as default. This patch changed more than 10 thousand tests.

OTHER EXPERIENCE

Korean Olympiad in Informatic
Silver Medal in Korean Olympiad in Informatics (KOI)   Jun 2016

Online Algorithm Competition
Top 1.5% of programmers on Codeforces. (Handle: hyeon_gyu, Rating: 2279)

Seoul National University Scholarship
Merit-Based Scholarship   Jan 2017, Feb 2018, Aug 2017, Feb 2019

SKILLS

Programming language: C++, Python
Relevant Coursework: Digital Computer Concept and Practice, Data Structures, Programming Methodology, Data Communication Networks, Principles of Programming, Principles and Practices of Software Development, Programming Language, Computer Organization, System Programming