DONGJAE LEE

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SUMMARY

I am currently a PhD student at MIT PDOS. My research interests include verification of computer systems, concurrency, and security. I have research experience with the Coq proof assistant, compiler verification, concurrent program verification, and security.

EDUCATION

Ph.D., Computer Science and Engineering — Current
Massachusetts Institute of Technology, Cambridge, MA, USA

M.S., Computer Science and Engineering — 02.2024
Seoul National University, Seoul, South Korea

- Advised by Chung-Kil Hur
- Thesis: Operational Semantics for Expressing and Reasoning about Fairness Properties

B.S., Physics, Computer Science and Engineering (Double Major) — 08.2021
Seoul National University, Seoul, South Korea

EXPERIENCE

Software Foundations Lab, Seoul National University — 03.2024 - 08.2024
Research Assistant: Seoul, South Korea

Max Planck Institute for Security and Privacy — 03.2023 - 08.2023
Research Intern: Bochum, Germany

- Advised by Cătălin Hrițcu
- Worked on secure compilation

Software Foundations Lab, Seoul National University — 09.2020 - 08.2021
Research Intern: Seoul, South Korea

- Advised by Chung-Kil Hur
- Worked on Conditional Contextual Refinement

ROK Army (Mandatory Military Service) — 01.2019 - 08.2020
Sergeant: South Korea

Integrated Quantum Systems Lab, Seoul National University — 04.2017 - 08.2017
Research Intern: Seoul, South Korea

- Advised by Dohun Kim
- Worked on NV center qubits, programming and developing devices for experiments

PUBLICATIONS

*equal contribution

Refinement Composition Logic
Youngju Song, **Dongjea Lee**.
International Conference on Functional Programming (ICFP 2024)

SECOMP: Formally Secure Compilation of Compartmentalized C Programs
Jérémy Thibault, Roberto Blanco, **Dongjae Lee**, Sven Argo, Arthur Azevedo de Amorim, Aïna Linn Georges, Cătălin Hrițcu, Andrew Tolmach.
Conference on Computer and Communications Security (CCS 2024)

Stuttering for Free
Minki Cho*, Youngju Song*, **Dongjea Lee**, Lennard Gäher, Derek Dreyer.
International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2023)

Fair Operational Semantics

Dongjae Lee*, Minki Cho*, Jinwoo Kim, Soonwon Moon, Youngju Song, Chung-Kil Hur.

Conference on Programming Language Design and Implementation (PLDI 2023)

Conditional Contextual Refinement

Youngju Song, Minki Cho, **Dongjae Lee**, Chung-Kil Hur, Michael Sammler, Derek Dreyer.

Symposium on Principles of Programming Languages (POPL 2023)

Sequential Reasoning for Optimizing Compilers under Weak Memory Concurrency

Minki Cho*, Sung-Hwan Lee*, **Dongjae Lee**, Chung-Kil Hur, Ori Lahav.

Conference on Programming Language Design and Implementation (PLDI 2022)

HONORS AND AWARDS

Master's Thesis Award	02.2024

Department of Computer Science and Engineering, Seoul National University: Seoul, South Korea

TALKS

Fair Operational Semantics	06.2023

PLDI 2023: Orlando, Florida, United States

Overview of Fair Operational Semantics (as a part of introducing Software Foundations Lab)	02.2023

SIGPL Winter School 2023 (The Korean Institute of Information Scientists and Engineers): Seoul, South Korea

TEACHING

(TA) Topics in Programming Languages (Logic in computer science)	09.2023 - 12.2023

by Makoto Tatsuta: Seoul National University, Graduate level course

(TA) Principles of Programming	09.2022 - 12.2022

by Chung-Kil Hur: Seoul National University, Undergraduate level course

(TA) Principles and Practices of Software Development	03.2022 - 06.2022

by Chung-Kil Hur: Seoul National University, Undergraduate level course

ACTIVITIES

Developing a Coq tutorial for refinement-based verification: https://github.com/dongjaelee1/refinement-tutorial