

Education

Software Foundations Lab, Seoul National University

M.S. Student, Computer Science and Engineering

Mar. 2025 – present

Program verification using proof assistants. Advisor: Chung-Kil Hur

Inha University

B.S., Computer Engineering, B.S., Mathematics (double major), GPA 4.09/4.50 *Mar. 2021 – Feb. 2025*

Publications

- [1] Dongjae Lee, Minki Cho, Jinwoo Kim, **Soonwon Moon**, Youngju Song, and Chung-Kil Hur. Fair operational semantics. *The 44th ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2023.
- [2] Kezhi Xiong, **Soonwon Moon**, Joshua Kang, Bryant Curto, Jieung Kim, and Ji-Yong Shin. Recraft: Self-contained split, merge, and membership change of raft protocol. *The 55th Annual IEEE/IFIP International Conference on Dependable Systems and Networks*, June 2025.

Experience

Korea University

Exchange Student

Sep. 2023 – Dec. 2023

Formal Computing and AI Lab, Inha University

Research Student

Mar. 2023 – Feb. 2025

Distributed system verification. Advisor: Jieung Kim

Software Foundations Lab, Seoul National University

Research Student

Jan. 2023 – Feb. 2023

Fair operational semantics. Advisor: Chung-Kil Hur

Software Foundations Lab, Seoul National University

Research Student

Jul. 2022 – Aug. 2022

Fair operational semantics. Advisor: Chung-Kil Hur

Software Foundations Lab, Seoul National University

Research Student

Jan. 2022 – Feb. 2022

Heapsort verification using conditional contextual refinement. Advisor: Chung-Kil Hur

Software Foundations Lab, Seoul National University

Research Student

Jul. 2021 – Aug. 2021

Hafnium verification. Advisor: Chung-Kil Hur

Teaching

Inha University

Teaching Assistant

CSE4312 Compiler Design. Instructor: Jieung Kim

Spring 2024

Personal projects

Interpreter for simply typed version of contextual modal type theory (Haskell):

<https://github.com/damhiya/MetaLambda>

Verification of weight-balanced leftist tree (Agda):

<https://github.com/damhiya/AgdaHeap/blob/master/Tree/WBLT/Base.agda>

Cut-elimination theorem for intuitionistic propositional logic (Agda):

<https://github.com/damhiya/Logos/tree/main/propositional-logic>

Weak normalization of STLC using Kripke logical relations (Agda):

<https://github.com/damhiya/Logos/tree/main/stlc>

Some syntactic properties of MLTT (Agda):

<https://github.com/damhiya/Logos/tree/main/mltt>

Interval analysis (Haskell):

<https://github.com/damhiya/interval-analysis>

Chatting system based on the raft algorithm (Rust, co-work with Bumsung Baek):

<https://github.com/TEAM-paxos/RaftChat>

Contribution to open source projects

Alex (Haskell): Improved the DFA minimization implementation of the alex lexer generator.

<https://github.com/haskell/alex/pull/176>

Kime (Rust): Contributed to math input feature of kime.

<https://github.com/Riey/kime/pull/377>

agda-stdlib (Agda): Several PRs.

<https://github.com/agda/agda-stdlib/pull/1475>

<https://github.com/agda/agda-stdlib/pull/1541>

<https://github.com/agda/agda-stdlib/pull/2438>

Languages

Korean: Native

English: TEPS 373

Skills

○ Haskell

○ Rocq

○ Linux

○ Iris (separation logic framework)

○ Rust

○ Agda

○ Nix/NixOS