Sung-Hwan Lee

Ph.D. Student at Seoul National University

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Research Interests

Concurrency: relaxed memory models for software/hardware, compiler correctness

Formal verification: interactive theorem proving, program logics, distributed systems

Education

Seoul National University 09/2017 - 08/2023 (expected)
Ph.D. Student in Computer Science and Engineering
Advisor: Chung-Kil Hur

Seoul National University 03/2013 - 08/2017
B.S. in Computer Science and Engineering

Seoul Science High School 03/2010 - 02/2013

Publications

* *equal contribution*

[1] (Ph.D. Thesis) Understanding and Fulfilling the Desiderata for Relaxed Memory Models.
Sung-Hwan Lee.
Department of Computer Science and Engineering, Seoul National University, Korea, 2023.

[2] Putting Weak Memory in Order via a Promising Intermediate Representation.
Sung-Hwan Lee, Minki Cho, Roy Margalit, Chung-Kil Hur, Ori Lahav.
PLDI 2023: *The 44th ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[3] Sequential Reasoning for Optimizing Compilers under Weak Memory Concurrency.
Minki Cho*, **Sung-Hwan Lee***, Dongjae Lee, Chung-Kil Hur, Ori Lahav.
PLDI 2022: *The 43rd ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[4] Revamping Hardware Persistency Models: View-based and Axiomatic Persistency Models for Intel-x86 and ARMv8.
Kyeongmin Cho, **Sung-Hwan Lee**, Azalea Raad, Jeehoon Kang.
PLDI 2021: *The 42nd ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[5] Modular Data-Race-Freedom Guarantees in the Promising Semantics.
Minki Cho, **Sung-Hwan Lee**, Chung-Kil Hur, Ori Lahav.
PLDI 2021: *The 42nd ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[6] Promising 2.0: Global Optimizations in Relaxed Memory Concurrency.
Sung-Hwan Lee, Minki Cho, Anton Podkopaev, Soham Chakraborty, Chung-Kil Hur, Ori Lahav, Viktor Vafeiadis.
PLDI 2020: *The 41st ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[7] Promising-ARM/RISC-V: A Simpler and Faster Operational Concurrency Model.
Christopher Pulte, Jean Pichon-Pharabod, Jeehoon Kang, **Sung-Hwan Lee**, Chung-Kil Hur.
PLDI 2019: *The 40th ACM SIGPLAN Conference on Programming Language Design and Implementation.*

[8] Illuminance During a Solar Eclipse with Limb Darkening: A Mathematical Model.
Sung-Hwan Lee, Siyul Lee.
Journal of the Korean Astronomical Society, vol. 45, no. 5, Oct. 2012.

Honors & Awards

Star Student Researcher Award 03/2023
BK21 FOUR Intelligence Computing, Seoul National University.

National Presidential Science Scholarship 03/2013 - 08/2017
Korea Student Aid Foundation.

Teaching

Teaching Assistant

Principles and Practices of Software Development Spring 2022
Instructor: Chung-Kil Hur Spring 2021
Spring 2020
Spring 2019
Spring 2018

Principles of Programming Fall 2018
Instructor: Chung-Kil Hur

References

Chung-Kil Hur, Professor, Seoul National University.

Ori Lahav, Associate Professor, Tel Aviv University.

Jeehoon Kang, Assistant Professor, KAIST.