Jay Lee 이재호 — Curriculum Vitae

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Research Interests

Programming Languages, Program Analysis, Functional Programming, and Human–Computer Interaction

Education

Mar 2024–Present **Seoul National University (SNU),** *M.S. in Computer Science and Engineering*
Advised by Kwangkeun Yi.

Mar 2018–Feb 2024 **Seoul National University (SNU),** *B.S. in Electrical and Computer Engineering (cum laude)*
Advised by Yoonchan Jeong.
Leave of absence for mandatory military service during 2020–2021.

Mar 2015–Feb 2018 **Korea Science Academy of KAIST (KSA),** *High school for gifted students*

Selected Research

OOPSLA 2025 **React-tRace: A Semantics for Understanding React Hooks**
Jay Lee, Joongwon Ahn, Kwangkeun Yi
Accepted (acceptance rate: 35.6%).

UIST 2025 Posters **ReDemon UI: Reactive Synthesis by Demonstration for Web UI**
Jay Lee, Gyuhyeok Oh, Joongwon Ahn, Xiaokang Qiu
Accepted.

PLDI 2025 Student Research Competition (SRC) **Retargeting an Abstract Interpreter for a New Language by Partial Evaluation**
Jay Lee
Awarded 2nd place in the graduate category.

Selected Honors

Aug 2025 **SIGPL Summer School 2025 Presentation Award 1st Place,** *KIISE SIGPL*
React-tRace: A Semantics for Understanding React Hooks

Jun 2025 **PLDI 2025 Student Research Competition (SRC) Graduate Category 2nd Place,** *ACM SIGPLAN*
Retargeting an Abstract Interpreter for a New Language by Partial Evaluation

Sep 2024 **Outstanding Teaching Assistant Award,** *SNU College of Engineering*
SNU 4190.310 Programming Languages

Aug 2024 **SIGPL Summer School 2024 Presentation Award 2nd Place,** *KIISE SIGPL*
Let's Catch Incorrect React Hook Usage Early!

Mar 2018–Feb 2024 **Presidential Science Scholarship,** *Korea Student Aid Foundation*
Full tuition waiver with an incentive offered to top 120 undergraduates in the field of science.

May 2017 **Intel International Science and Engineering Fair (ISEF) Finalist,** *Korean representative*
Receding Horizon Next-Best-View Planner Based Voronoi-Biased 3D Multi-Robot Exploration Algorithm

Mar 2015–Feb 2018 **Korea Science Academy Fund Scholarship,** *Korea Science Academy of KAIST*
For students with high GPAs.

Teaching

Teaching Assistant

Spring 2025 **SNU 4190.664A Program Analysis,** *Outstanding Teaching Assistant Award (currently nominated)*
Spring 2025 **SNU 4190.310 Programming Languages**
Fall 2024 **SNU 4190.209 Computer Engineering Seminar**
Spring 2024 **SNU 4190.310 Programming Languages,** *Outstanding Teaching Assistant Award*

Spring 2022 **SNU 4190.310 Programming Languages**, *Undergraduate TA*

Tutoring

Fall 2024 **SNU SPLIT Basic Programming Tutoring**, *Python tutor*

Industry Employment

Apr 2019–Dec 2019 **Jeongyookgak**, *iOS application developer*
Developed an iOS app for Jeongyookgak, a distribution business startup that delivers fresh meat to customers.

Miscellaneous

2025–Present **PL Reading Group @ Seoul/Tokyo**, *Co-organizer*
PL reading group with participants from *Programming Research Laboratory at Seoul National University* and *Programming Research Group at the Institute of Science Tokyo.* Tuesday every week at 2 PM KST/JST.

2025–Present **OCaml organization**, *Opam repository maintainer*
Maintaining the OCaml package repository.

2023–Present **easyword.kr**, *Designer & developer*
A platform to suggest and discuss Korean translations of computer science jargons. Led by Prof. Kwangkeun Yi and funded by the Korean Institute of Information Scientists and Engineers (KIISE).

2020–Present **simplebnf**, *Developer*
A LaTeX package that provides a simple way to typeset BNF using a DSL. Available on CTAN.

2023 **Cycloidal-Surfaces**, *Illustrator & developer*
Illustrations of cycloid surfaces on parametrized curves with Asymptote, used in Hyounggyu Choi (2023), Invariance of the Area and Volume of Cycloid Surfaces and Trochoid Surfaces. *The American Mathematical Monthly* 130:1, 49–62.

2020 **CycloidGen**, *Illustrator & developer*
Illustrations of cycloids on parametrized curves with Ti*k*Z and Python, used in Hyounggyu Choi (2020), Invariance of the Length and the Area of Cycloids. *The American Mathematical Monthly* 127:6, 537–544.

2019–2024 **Korean TeX Society (KTS)**, *Member*
I have given a few talks including:

- Modern TeX: Engines, AI, and Automation, 2023 KNU LaTeX Workshop
- Drawing tables with `tabularray`, 2022 KNU LaTeX Workshop
- Asymptote: The Vector Graphics Language, 2021 KNU LaTeX Workshop
- The "key-value" structure in LaTeX, 2021 KNU LaTeX Workshop
- `beamer`: Content-focused Presentation, 2020 KNU LaTeX Workshop
- TeXnical Vim, 2020 KTS Conference
- `memoir`: chapter style, 2019 KNU LaTeX Workshop

2018–2024 **SNULife**, *Development head*
SNULife is the web community for SNU with 180k+ monthly visitors. I created an iOS app for planning timetables and sharing lecture reviews, used by 5k+ users.

2020–2021 **Republic of Korea (ROK) Army**, *Sergeant signaler*
Completed mandatory military service in the ROK Army.

2018 **Student Representative**, *Department of Electrical and Computer Engineering*
Elected as a student representative for the Department of Electrical and Computer Engineering at SNU.

KYPT 2016, 2017 **Korea Young Physicists' Tournament**, *Team lead*
KYPT is a physics competition for high school students. I led the team that won a gold medal in KYPT 2017 and a bronze medal in KYPT 2016.

KIPS 2016 **Receding Horizon Next-Best-View Planner Based Voronoi-Biased 3D Multi-Robot Exploration Algorithm**
J. Lee, C. Lee, W. Jung, S. Song, S. Jo
A domestic conference paper.

2016 **Frontiers Summer Program,** *Worcester Polytechnic Institute*
Studied aerospace engineering and psychology at Worcester Polytechnic Institute in the USA.

Natural Languages

Korean/한국어 (native, 1999), **English** (fluent, 2006), **Spanish/Español** (elementary, 2022)

Programming Languages

C (2012), **Python** (2013), C++ (2016), **TEX** (2016), Swift (2018), Ti*k*Z (2018), **OCaml** (2019), λ calculus (2019), **LATEX3/expl3** (2019), Asymptote (2020), Scheme (2020), AWK (2020), JavaScript (2020), Lua (2021), `CWEB` (2021), Yacc (2021), **ReScript** (2022), **React** (2022), Rocq/Coq (2023), Rust (2023), **TypeScript** (2023), Typst (2024), Penrose (2024), Nix (2024), Lean (2025). I use the **bolded** languages frequently.