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
Proc. ACM Program. Lang. 9, OOPSLA2, Article 289 (October 2025). (Acceptance rate: 35.6%)

UIST 2025 Posters **ReDemon UI: Reactive Synthesis by Demonstration for Web UI**
Jay Lee, Gyuhyeok Oh, Joongwon Ahn, Xiaokang Qiu
The 38th Annual ACM Symposium on User Interface Software and Technology (UIST Adjunct '25), September 28–October 1, 2025, Busan, Republic of Korea.

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.