

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

- 📄🔗 **REACT-tRACE: A Semantics for Understanding React Hooks**
OOPSLA 2025 Jay Lee, Joongwon Ahn, Kwangkeun Yi
Conditionally accepted.
- 📄🔗 **ReDemon UI: Reactive Synthesis by Demonstration for Web UI**
UIST 2025 Jay Lee, Gyuhyeok Oh, Joongwon Ahn, Xiaokang Qiu
Posters *Submitted.*
- 📄📺🌐 **Retargeting an Abstract Interpreter for a New Language by Partial Evaluation**
PLDI 2025 Jay Lee
Student Research Competition (SRC) *Awarded 2nd place in the graduate category.*

SELECTED HONORS


- Jun 2025 **PLDI 2025 Student Research Competition (SRC) 2nd Place**
For the work on *Retargeting an Abstract Interpreter for a New Language by Partial Evaluation*.
- Sep 2024 **Outstanding Teaching Assistant Award**
For the course *SNU 4190.310 Programming Languages* taught by Prof. Kwangkeun Yi.
- Mar 2018–Feb 2024 **National Presidential Scholarship for Science**
Offered to top-120 undergraduate students in the field of science and technology.
- May 2017 **Intel International Science and Engineering Fair (ISEF) Finalist**
For the project *Receding Horizon Next-Best-View Planner Based Voronoi-Biased 3D Multi-Robot Exploration Algorithm*.
- Mar 2015–Feb 2018 **Korea Science Academy Fund Scholarship**
For students with high GPAs.

TEACHING

Teaching Assistant


- Spring 2025 **SNU 4190.664A Program Analysis**
- Spring 2025 **SNU 4190.310 Programming Languages**
- Spring 2024 **SNU 4190.310 Programming Languages**
Awarded the Outstanding Teaching Assistant Award for this course.
- Spring 2022 **SNU 4190.310 Programming Languages**


INDUSTRY EMPLOYMENT


 **Jeongyookgak, iOS application developer**
Apr 2019–Dec 2019 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 2PM KST/JST.

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

 **easyword.kr, Designer & developer**
2023–Present 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).


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

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

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

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


- [Modern \$\text{\LaTeX}\$: Engines, AI, and Automation](#), 2023 KNU \LaTeX Workshop
- [Drawing tables with tabularray](#), 2022 KNU \LaTeX Workshop
- [Asymptote: The Vector Graphics Language](#), 2022 KNU \LaTeX Workshop
- [The “key-value” structure in \$\text{\LaTeX}\$](#) , 2021 KNU \LaTeX Workshop
- [beamer: Content-focused Presentation](#), 2020 KNU \LaTeX Workshop
- [\$\text{\TeX}\$ nicol Vim](#), 2020 KTS Conference
- [memoir: chapter style](#), 2019 KNU \LaTeX Workshop

 **SNULife, Development head**
2018–2024 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 signaller**
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.

 **Receding Horizon Next-Best-View Planner Based Voronoi-Biased 3D Multi-Robot Exploration Algorithm**
KIPS 2016 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.

PROGRAMMING LANGUAGES

C (2012), **Python** (2013), C++ (2016), **T_EX** (2016), Swift (2018), TikZ (2018), **OCaml** (2019), λ calculus (2019), **L^AT_EX3/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.

NATURAL LANGUAGES

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