

# 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. (Acceptance rate: 43.8%)*  
*Awarded a Best Poster Honorable Mention Award.*
- 📄🎥🌐 PLDI 2025 Student Research Competition (SRC) **Retargeting an Abstract Interpreter for a New Language by Partial Evaluation**  
Jay Lee  
*Awarded 2<sup>nd</sup> place in the graduate category.*

## SELECTED HONORS

- Oct 2025 **UIST 2025 Best Poster Honorable Mention Award, ACM SIGCHI & SIGGRAPH**  
ReDemon UI: Reactive Synthesis by Demonstration for Web UI
- Aug 2025 **SIGPL Summer School 2025 Presentation Award 1<sup>st</sup> Place, KIISE SIGPL**  
REACT-tRACE: A Semantics for Understanding React Hooks
- Jun 2025 **PLDI 2025 Student Research Competition (SRC) Graduate Category 2<sup>nd</sup> 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 2<sup>nd</sup> 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	<b>SNU 4190.664A Program Analysis</b> , <i>Outstanding Teaching Assistant Award (currently nominated)</i>
Spring 2025	<b>SNU 4190.310 Programming Languages</b>
Fall 2024	<b>SNU 4190.209 Computer Engineering Seminar</b>
Spring 2024	<b>SNU 4190.310 Programming Languages</b> , <i>Outstanding Teaching Assistant Award</i>
Spring 2022	<b>SNU 4190.310 Programming Languages</b> , <i>Undergraduate TA</i>

## Tutoring

Fall 2024	<b>SNU SPLIT Basic Programming Tutoring</b> , <i>Python tutor</i>
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## INDUSTRY EMPLOYMENT

Apr 2019–Dec 2019	 <b>Jeongyookgak</b> , <i>iOS application developer</i> Developed an iOS app for Jeongyookgak, a distribution business startup that delivers fresh meat to customers.
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## MISCELLANEOUS

2025–Present	 <b>PL Reading Group @ Seoul/Tokyo</b> , <i>Co-organizer</i> PL reading group with participants from <i>Programming Research Laboratory at Seoul National University</i> and <i>Programming Research Group at the Institute of Science Tokyo</i> . Tuesday every week at 2 PM KST/JST.
2025–Present	 <b>OCaml organization</b> , <i>Opam repository maintainer</i> Maintaining the OCaml package repository.
2023–Present	 <b>easyword.kr</b> , <i>Designer &amp; developer</i> 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	 <b>simplebnf</b> , <i>Developer</i> A $\LaTeX$ package that provides a simple way to typeset BNF using a DSL. Available on <a href="#">CTAN</a> .
2023	 <b>Cycloidal-Surfaces</b> , <i>Illustrator &amp; developer</i> 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. <i>The American Mathematical Monthly</i> 130:1, 49–62.
2020	 <b>CycloidGen</b> , <i>Illustrator &amp; developer</i> Illustrations of cycloids on parametrized curves with TikZ and Python, used in Hyunggyu Choi (2020), Invariance of the Length and the Area of Cycloids. <i>The American Mathematical Monthly</i> 127:6, 537–544.
2019–2024	<b>Korean <math>\TeX</math> Society (KTS)</b> , <i>Member</i> I have given a few talks including: <ul style="list-style-type: none"> <li>• <a href="#">Modern <math>\TeX</math>: Engines, AI, and Automation</a>, 2023 KNU <math>\LaTeX</math> Workshop</li> <li>• <a href="#">Drawing tables with <code>tabularray</code></a>, 2022 KNU <math>\LaTeX</math> Workshop</li> <li>• <a href="#">Asymptote: The Vector Graphics Language</a>, 2021 KNU <math>\LaTeX</math> Workshop</li> <li>• <a href="#">The “key-value” structure in <math>\LaTeX</math></a>, 2021 KNU <math>\LaTeX</math> Workshop</li> <li>• <a href="#">beamer: Content-focused Presentation</a>, 2020 KNU <math>\LaTeX</math> Workshop</li> <li>• <a href="#"><math>\TeX</math>nical Vim</a>, 2020 KTS Conference</li> <li>• <a href="#">memoir: chapter style</a>, 2019 KNU <math>\LaTeX</math> Workshop</li> </ul>
2018–2024	 <b>SNULife</b> , <i>Development head</i> 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	<b>Republic of Korea (ROK) Army</b> , <i>Sergeant signaler</i> Completed mandatory military service in the ROK Army.
2018	<b>Student Representative</b> , <i>Department of Electrical and Computer Engineering</i> Elected as a student representative for the Department of Electrical and Computer Engineering at SNU.
KYPT 2016, 2017	<b>Korea Young Physicists' Tournament</b> , <i>Team lead</i> 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.

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### NATURAL LANGUAGES

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

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### PROGRAMMING LANGUAGES

C (2012), **Python** (2013), C++ (2016), **T<sub>E</sub>X** (2016), Swift (2018), TikZ (2018), **OCaml** (2019),  $\lambda$  calculus (2019), **L<sup>A</sup>T<sub>E</sub>X3/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.