

Sanggyu Lee

✉ sanggyu523@naver.com · 🌐 sanggyu.com · 🌐 gyusang · in sanggyu-lee-5b9602313

Education

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| BS Seoul National University , Computer Science and Engineering | Mar 2020 – Aug 2026 |
| • GPA: 4.17 / 4.3 | |
| Georgia Institute of Technology , Computer Science | Jan 2025 – May 2025 |
| • Exchange Student for Spring 2025 | |

Experience

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| Jane Street Asia Limited 
Software Engineering Intern | May 2025 – June 2025 |
| <ul style="list-style-type: none">• Engineered a <i>full-stack</i> internal tool using <i>open source graph visualization</i> library and <i>Bonsai</i> to visualize complex cash movements as an interactive graph, reducing the time required for data lineage analysis and debugging.• <i>Contributed</i> to an <i>OCaml</i> codebase by applying <i>functional programming</i> principles and participating in <i>peer code reviews</i> to maintain code quality. | |
| Architecture and Code Optimization Lab  (Prof. Jae W. Lee)
Undergraduate Researcher | Apr 2024 – Aug 2024 |
| <ul style="list-style-type: none">• Applied HW-SW Co-Design to build a <i>heterogeneous LLM inference system</i> using CXL PNM, achieving a 2x theoretical throughput gain.• Evaluated and optimized fp8 rounding methods on weight and activation parameters by analyzing <i>error expectations</i>. | |
| Republic of Korea Army
Soldier | Sept 2022 – Mar 2024 |
| FriendlyAI Inc. 
Research Intern | July 2022 – Aug 2022 |
| <ul style="list-style-type: none">• Expedited NVIDIA CUDA GPU collective operations running matrix multiplication in parallel, with a <i>speed comparable to the SOTA library</i>. | |
| Whew-AI Inc.
Director & Co-Founder | July 2021 – June 2022 |
| <ul style="list-style-type: none">• Surpassed SOTA scores in remote PPG (heart rate estimation from facial video) through innovative research.• Developed a video chat application with a built-in heart rate monitor, creating a <i>new avenue for remote communication</i>. | |
| AI & Big Data Lab, Seoul National University Hospital (Prof. Du Hyun Ro)
Researcher & Software Engineer | Apr 2021 – Apr 2022 |
| <ul style="list-style-type: none">• Developed a full-stack web service for <i>surgical planning</i> by analyzing <i>AP X-ray images</i>, streamlining the <i>pre-surgical workflow</i>.• Enabled an <i>AI startup</i>, Connecte , to secure seed funding by delivering <i>core technologies and product demos</i>. | |

Projects

Hana Academy Seoul Timetable Optimization

July 2024 – Feb 2025

- Solved a **large-scale scheduling problem** for *600 students* with diverse course preferences, 60 teachers, and complex constraints using Google **OR-Tools** SAT solver
- Reduced computation time from **5000 CPU-hours to 12 CPU-hours** by applying advanced heuristics, making the solution feasible.

Awards

1st Place, 2024 Accelerator Programming Summer School

- Achieved **50,000x acceleration** of a *Variational Autoencoder (VAE) model*, demonstrating deep expertise in *optimization techniques*.

2nd Place, 2022 Cryptoanalysis Contest

- Successfully executed a **power analysis attack** on competition data.
- Awarded by the Director of Defense Intelligence Agency (*Lieutenant General*).

2nd Place, 2021 SNU FastMRI Challenge

- **Contributed** [🔗](#) to Facebook Research's *fastMRI repository* by researching *E2EVarNet* and *DFT techniques*.
- Awarded **₩5M (~USD 4K)**.

Gold Prize (2nd Place), 2021 International Student Car Competition (Autonomous Driving)

- Integrated **SLAM, vision, and path planning algorithms** to complete a real-world driving course with a *model car*.

Publications

A deep learning based automatic two-dimensional digital templating model for total knee arthroplasty.

Nov 2024

Park J, Kim S, Kim B, et al

[10.1186/s43019-024-00240-7](https://doi.org/10.1186/s43019-024-00240-7) [🔗](#)

Automated Detection of Surgical Implants on Plain Knee Radiographs Using a Deep Learning Algorithm

Nov 2022

Kim B, Lee DW, **Lee S**, et al

[10.3390/medicina58111677](https://doi.org/10.3390/medicina58111677) [🔗](#)

A Model Car for Autonomous Driving Education with Enhanced Perception and Maneuvering Ability

Sept 2020

J Moon, **S Lee**

Journal of Youth Engineering

Path Planning and Maneuvering Algorithm for Stable Rotation-Driving on Simple Solid Lanes

Sept 2019

S Lee, H Kim, J Byun, et al

Journal of Youth Engineering