Seoyong Lee

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Interests

Algorithms; Elegant ideas;

Education

Seoul National University *March 2020 – Feb 2026*
BS in Electrical and Computer Engineering

- GPA: 4.26/4.3
- Leave of absence for alternative military service (01/2023-11/2024)

Korea Science Academy of KAIST *March 2017 - Feb 2020*
First high school in Korea for science-gifted students

- GPA: 4.26/4.3, Graduated with distinction in overall GPA, Awarded by the Mayor of Busan

Experience

Quantitative Trading Intern *HKG & NYC*
Jane Street *June 2025 – Aug 2025*

- Market Making. Finding good trading strategies.
- Received full time offer.

Undergraduate Researcher *Seoul, Korea*
Accelerated Intelligent Systems Lab (AISys), SNU *April 2024 – Sep 2025*

- **Approximate Graph Pattern Mining :** Developed a system that can mine patterns from graphs with tens of billions of edges within few seconds.
- **Approximate Nearest Neighbor Search :** Proposed a Multiple-Query optimization framework tailored to graph-based ANNS.

Data Scientist *Seoul, Korea*
AB180 *Oct 2023 – Dec 2024*

- High-level planning and ideation for diverse projects, including ad attribution algorithms, AppTracking-Transparency (ATT) consent rate optimization, and in-app advertisement (IAA) optimization.
- Developed a Retrieval-Augmented-Generation (RAG) system and further enhanced it into a multi-agent system with expanded functionalities.

Research Scientist *Seoul, Korea*
AIRS Medical *Jan 2023 – Oct 2023*

- Implemented SOTA deep-learning architectures to improve image restoration(denoising, super-resolution) performance and to mitigate artifacts produced by deep learning.
- Implemented mathematical algorithms for the MRI reconstruction pipeline, including 3D-SENSE from Philips.

Preprint

AGIS: Fast Approximate Graph Pattern Mining with Structure-Informed Sampling. *VLDB 2026, under revision*

Seoyong Lee, Jinho Lee

Rethinking Multiple-Query Optimization for Approximate Nearest Neighbor Search. *NeurIPS 2025, under review*

Seoyong Lee, Taehee Kwon, Jihwan Jang, Woobeen Jo, Jinho Lee

Selected Honors & Awards

LG Optimization Grand Challenge
- Competition aimed at developing the best-performing algorithm for a variant of the Vehicle Routing Problem.
- Awarded the Grand Prize (1st place) out of 378 participating teams & Presented a talk at the 2024 Korean Institute of Industrial Engineers Fall Conference.

Competitive Programming
- 2024 Samsung Collegiate Programming Cup 5th place award.
- Qualified for second round of 2021 ICPC Seoul Regional.

Scholarships
- National Science Technology Scholarship (2022 $\sim$)
- Scholarship for Academic Excellence (2017-2020, 2021).
- $20K support over the period

Korean Young Physicists' Tournament (KYPT 2018)
- Grand Prize (1st place), Minister of Science and ICT Award

Skills

Languages: Korean(Native), Fluent English

Programming: C++, Python, CUDA, Matlab

Tools: Pytorch, Numpy, Scipy, Gurobi, Pandas, Git, Docker, Latex