

Sumin Kim.

Civil & Environmental Engineering
Electrical & Computer Engineering

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RESEARCH INTERESTS Control Theory · Complex Variables

01 Education

Seoul National University

March 2022 — Present

Civil and Environmental Engineering
Double major in Electrical and Computer Engineering

Gyeonggi Science High School

March 2019 — February 2022

GPA 3.96 / 4.30

Relevant coursework

Algorithm, Computer Architecture, Linear Algebra, Abstract Algebra, Statistics, Control Theory

02 Skills & standardized tests

Programming languages	C/C++, Python, MATLAB, LaTeX
ML/DL frameworks	PyTorch
Tools & technologies	Git, Linux
Competitive programming	Codeforces peak rating 1908 Handle: SuminKim

TOEFL iBT

August 22, 2026

Total score **90** / 120

Reading	Listening	Speaking	Writing
4.5 / 6	5.5 / 6	4.0 / 6	4.0 / 6

03 Research experience

Undergraduate Research Intern

January 2025 — February 2025

Dept. of Electrical and Computer Engineering, Seoul National University
Advisor: Prof. Jaewoong Sim

Analyzed and optimized Vulkan-Sim focusing on 3D Gaussian Ray Tracing and implemented Spherical Harmonics for 3DGRT. Profiling of ray tracing pipeline components.

Research Assistant

August 2020

Convergence Security Lab, Dept. of Financial Information & Security Convergence, Kookmin University

Dr. Seung-Hwan Yoon

Conducted research and practical implementation on quantum-based random number generators tailored for low-spec computing environments.

Research Collaborator

April 2020 — December 2020

Dept. of Mathematics, Hankuk University of Foreign Studies

Prof. Il-Gyu Choi

Contributed to mathematical research aimed at improving the lower bound of the Ramsey number $R(C_4, K_{11})$.

04 Professional experience

Samsung Talented Internship Program

July 2024 — August 2024

Samsung Electronics Device Solutions

Spearheaded a project to create a Retrieval-Augmented Generation (RAG) pipeline tailored for SVRF manual and code search.

- Developed and implemented a RAG pipeline aimed at improving search queries and code generation accuracy for the SVRF (Standard Verification Rule Format) manual.
- Integrated RAG techniques alongside RAFT fine-tuning to enhance the relevance and accuracy of retrieved data in code search applications.
- Collaborated on mentoring and skill development, engaging in bi-weekly seminars on NLP, language model fundamentals, and RAG techniques.
- Constructed and embedded data sources for indexing and retrieval, ensuring high relevance in search results.
- Implemented RAG with RAFT fine-tuning to increase the efficiency of search augmentation.
- Conducted mentoring sessions to build proficiency in Python, PyTorch, and Hugging Face libraries, adapting skills to high-performance environments.

05 Preprints & publications

arXiv:2601.06868 [math.CV] · January 11, 2026

Complex Analysis and Riemann Surfaces: A Graduate Path to Algebraic Geometry

Gunhee Cho, Bae Dongsong, Junhyuk Boo, Byungjoo Jeon, Yonghyun Ji, **Sumin Kim**, Namho Kim, Minseung Kwak, Hojae Jung, Hyunsoo Yoo, Hyunmin Yoon.

[Read on arXiv](#)

06 Awards, honors & scholarships

Bronze in Mathematics

2020

16th Asia-Pacific Conference on Giftedness

Gold · 2nd place

2020

5th Kookmin University Algorithm Competition

Korea Olympiad in Informatics (KOI), Final

Silver (2018), Bronze (2017), Bronze (2016), Silver (2015)

International Olympiad in Informatics (IOI) Summer and Winter Schools

Completion · Hosted by KIISE

- Completed Beginner's Summer School (July 29, 2019 — August 19, 2019) and Winter School (January 6, 2020 — January 17, 2020).
- Advanced to Continuation Class as a top-10 student; completed Continuation Class Summer School (August 14, 2020 — August 23, 2020) and Winter School (January 19, 2021 — January 28, 2021).

Top Student for Academic Excellence

2022-2 Semester

1st-year student, Seoul National University

1st Place · Creative Award Competition

2022

Dept. of Civil and Environmental Engineering, SNU

정고 유태웅 Academic Scholarship

2023-1, 2023-2 Semesters

Full Scholarship

관악회 (권호진 Sponsorship) Academic Scholarship

2024-2 Semester

Full Scholarship