# Minkyun Seo

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## Education

**Seoul National University (SNU)** Sep. 2025 – Present
Integrated Ph.D. Program in Computer Science and Engineering Seoul, Republic of Korea

- Advised by Prof. Jaesik Park at the Visual & Geometric Intelligence Lab

**Seoul National University (SNU)** Mar. 2019 – Aug. 2025
B.S. in Computer Science and Engineering, Architecture Engineering Seoul, Republic of Korea

- **Summa Cum Laude**, GPA: 3.93/4.3 (cumulative), 4.01/4.3 (CSE major)
- Jul. 2021 – Jan. 2023: Absence for mandatory military service

**Sejong Science High School** Mar. 2016 – Feb. 2019
Specialized High School for Gifted Students in Science and Mathematics Seoul, Republic of Korea

## Research Interest

- **Replicating Real-World Environments in Virtual Spaces**: 3D Reconstruction, Point Cloud Registration

## Publication

1. **Minkyun Seo**[*], Hyungtae Lim[*], Kanghee Lee, Luca Carlone, Jaesik Park[†], "BUFFER-X: Towards Zero-Shot Point Cloud Registration in Diverse Scenes", *Int. Conf. on Computer Vision (ICCV), 2025*

## Research Experience

**Visual & Geometric Intelligence Lab (PI: Jaesik Park) | SNU** Dec. 2023 – Aug. 2025
Research Intern Seoul, Republic of Korea

- Worked on generalizable point cloud registration for diverse real-world conditions

**AIoT Lab (PI: Hyung-Sin Kim) | SNU** Jun. 2023 – Sep.2023
Research Intern Seoul, Republic of Korea

- Contributed to early-stage research on Covariate Shifts in Environment and Sensor Domain

## Projects

**[P1] FastMRI Challenge, SNU** Jun. 2024 – Sep. 2024

- Implemented various memory optimization strategies to improve computational efficiency during training

**[P2] Drone-Based 3D Reconstruction of SNU Lecture Hall** Apr. 2024 – Jun. 2024

- Reconstructed a 3D mesh model of the Lecture Hall at SNU from images captured using a drone
- Analyzed conditions leading to poor 3D reconstruction outcomes, emphasizing the need for methods that address the limitations of real-world data collection

**[P3] Department Office Chatbot** May. 2024

- Developed a chatbot to assist with administrative office tasks using RAG and InstructGPT
- Integrated a diffusion model to provide contextualized responses with enhanced user experience

**[P4] Avatar Texture Enhancement via 3D Patch-wise Loss** Sep. 2023 – Dec. 2023

- Improved avatar texture reconstruction by mitigating oversaturation of dominant colors caused by L1 loss
- Introduced new evaluation metrics to address the absence of quantitative evaluation for texture reconstruction

**[P5] PlayEye: Toy for Preventing Child Myopia** May. 2023 – Sep. 2023

- Developed child-friendly physical toy and software UI for efficient eye exercise and cognitive development
- Implemented software to detect eye movement and manage audio, visual, and haptic I/Os

**[P6] You Only Cook Once** Dec. 2022 – Mar. 2023

- Developed a cooking assistant AI which predicts the doneness of ingredients

## Scholarships and Awards

**Graduate Research Fellowship** | **DB Group** Sep. 2025 – Present

**National Excellence Scholarship** | **Korea Student Aid Foundation** Mar. 2021 – Jun. 2024

- Full tuition awarded to the top-performing students in science and engineering across the nation

**Merit-based Scholarship** | **SNU** Sep. 2019 – Feb. 2021, Jul. 2024 – Dec. 2024

**Grand Prize, Creative Engineering Design Fair** | **SNU Engineering [P5]** Sep. 2023

- Received a travel grant to Mobile World Congress(MWC) 2024 in Barcelona, Spain

**Grand Prize, National ICT Smart Device Contest** | **Ministry of Science and ICT [P5]** Aug. 2023

**Grand Prize, Ambient AI Competition** | **SNU Graduate School of Data Science [P6]** Mar. 2023

**Second Prize, FriendliAI LLM hackathon** | **FriendliAI [P3]** May. 2024

**Certificate of Appreciation** | **Republic of Korea Army** Jan. 2023

**Grand Prize, Military AI Specialist Program** | **Republic of Korea Army** Dec. 2022

## Extracurricular Activities

**CES 2025 SNU Pavilion Student Supporter** Nov. 2024 – Jan. 2025

- Represented Tommoro Robotics, providing in-depth technical explanations of the company's core technologies

**AttentionX, AI Research Group** Jun. 2024 – Dec. 2024

**Leader, SNU Engineering Honor Society (STEM)** Mar. 2023 – Mar. 2025

- Served as the **representative of the 14th generation** of STEM, leading the top-performing engineering student society where 25 students are selected annually from 3,000+ engineering students.
- Operating STEMentor: Major snapshot program to provide introductions and insights on engineering courses
- Introduced and deployed the STEM Intranet platform
- Delivered multiple academic seminars focused on advanced topics in Computer Vision

**Vision Mentoring & Vision Exhibition** Mar. 2023 – Present

- Conducting biannual mentoring sessions for 500+ underclassmen and high school students
- Delivered lectures providing an overview of core computer science courses and their applications

**Presidential Security Service** | **Military Service** Jul. 2021 – Jan. 2023

- Provided security service for the President, immediate family and the Blue House, the presidential residence

**SNU Sunshine Volunteer** | **Habitat for Humanity International** Mar. 2020 – Jun. 2021

- Led 7 projects assisting low-income households by crafting wooden furniture and repairing homes

## Skills

**Programming Languages**: Python, C/C++, Java, Javascript, RISC-V
**Frameworks/Misc**: Pytorch, Pytorch3D, Open3D, Diffusers, CUDA, LangChain, Git, Verilog
**3D Tools**: Rhinoceros 3D, AutoCAD, Solidworks, Meshlab, MeshRoom, Blender