Jeongbin Sohn

sjb010409@gm.gist.ac.kr | +82-10-5137-0541 | Gwangju, Republic of Korea | LinkedIn | Personal Website

RESEARCH INTERESTS

Vision-based Navigation, Robot Perception, Computer Vision, Spacecraft Autonomy

EDUCATION

Gwangju Institute of Science and Technology (GIST) Mar 2020 – expected Feb 2027
B.S. Mechanical and Robotics Engineering Major & EECS Minor
Cumulative GPA: 4.38/4.5

University of California, Berkeley Jan 2026 – May 2026
Study Abroad Program

KATUSA (Korean Augmentation To the United States Army) Dec 2021 – Jun 2023
Military Service, CP TANGO | Seongnam, South Korea

Boston University Jul 2021 – Aug 2021
Summer Exchange Program

Relevant Coursework: Computer Vision, Digital Signal Processing, Automatic Control, Robot Kinematics and Vision, System Modeling and Control, Dynamics, Introduction to Artificial Intelligence, Linear Algebra, Probability and Statistics

SKILLS

- **Programming**: Python (PyTorch, PyTorch Geometric, NumPy), C++, C, MATLAB
- **Engineering Tools**: ROS, OpenCV, LabVIEW, Siemens NX, COMSOL Multiphysics, OpenFOAM
- **Development Tools**: Git, Linux, Docker
- **Language**: English (fluent), Korean (native), Japanese (elementary)

RESEARCH EXPERIENCE

Student Intern Jan 2025 – Present
Machine Perception and Intelligence Lab (MPIL) | Gwangju, South Korea
Supervisor: Prof. Pyojin Kim

- Developed **SIGNN++**, a **graph neural network**-based star identification framework robust to terrestrial noise such as light pollution, clouds, and motion blur
- Achieved a **98.5% solved rate** on real night-sky images, compared with 79.1% for the strongest existing method
- Built a real-world evaluation setup using a **Rocket Lab ST-RT star tracker** as the attitude reference
- Adapted star identification algorithms to **lunar crater identification** in collaboration with the Korea Institute of Energy Technology (KENTECH)

Student Intern Jan 2026 – Jun 2026
Embodied Dexterity Group (EDG) | Berkeley, CA
Supervisor: Prof. Hannah Stuart

- Analyzed recorded videos of individuals with C5–C7 spinal cord injuries using the **dorsal grasper** and estimated its **3D pose** with the PnP algorithm

Student Intern Jul 2024 – Dec 2024
Bio-Robotics Lab | Gwangju, South Korea
Supervisor: Prof. Jongho Lee

- Studied the Robot Operating System (ROS) and **path-planning** algorithms

Research Assistant Aug 2023 – Feb 2024
Korea Institute of Industrial Technology (KITECH) | Gwangju, South Korea
Supervisor: Dr. Hojae Lee

- Ported existing code to Python and implemented a domain-change algorithm for **indoor localization**

PUBLICATIONS

Conference Presentation

- **Sohn**, Lee, Yen, Gwon, Han, Hepburn-Dickins, Coltin, Soussan, and Kim, 2027 ICRA, "SIGNN++: Robust Graph Neural Star Identification on Earth" (Under Review)
- **Sohn***, Kim*, Kim, and Lee, 2026 IROS SRW, "Craters as Constellations: Adapting Star Identification to Lunar Crater Identification", Accepted for Poster Presentation (*equal contribution)
- Park, **Sohn**, and Lee, 2025 Institute of Control, Robotics and Systems (ICROS) Annual Conference, "A Low-Cost Celestial Compass Under Low-Light Featureless Environment", Accepted for Poster Presentation

---

SCHOLARSHIPS & AWARDS

Study Abroad Program Scholarship (26,000 USD) Jan 2026 – May 2026
Awarded to eight students selected for the Study Abroad Program (SAP) at UC Berkeley

Korea National Science and Engineering Scholarship (Full Tuition) Mar 2020 – Feb 2027
Full-tuition scholarship for eight semesters, funded by the Korea Student Aid Foundation, Ministry of Education

Korea-U.S. Exchange Program for Advanced Fields (9,000 USD) Jan 2026 – May 2026
Merit-based scholarship awarded by the Korea Institute for Advancement of Technology (KIAT) to 113 undergraduate students in South Korea

Woonhae Scholarship (5,560 USD) Mar 2025 – Feb 2026
Merit-based scholarship awarded by the Woonhae Foundation for two consecutive semesters to students with a GPA above 4.0/4.5

U.S. Army Commendation Medal Jun 2023
GIST Mech-Eng Internship Presentation Award (2nd place) Jun 2021

TEACHING EXPERIENCE

Teaching Assistant Sep 2024 – Dec 2024
GIST GS2001 Multivariable Calculus and Applications | Gwangju, South Korea

---

LEADERSHIP & ACTIVITIES

GIST Swimming Club Leader Mar 2025 – Aug 2025
ELITE Club Founding Member Jul 2025 – Dec 2025
Korean-American Scientists & Engineers Association (KSEA) Member Feb 2026 – May 2026
Language Exchange Program Feb 2026 – May 2026