Junseo Min — Researcher

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Education

Kwangwoon University
Robotics — *Major*

Kwangwoon University
Computer Science — *Minor*

Kwangwoon University
Autonomous Driving Technician Training Program — *2023.05–2023.10*

Skills & Interests

Programming: C++, Python, ROS1/2, PyTorch — *Strong*

Research Interest: SLAM, Navigation, Localization, DeepLearning — *Professional Interests*

Career

Cheil Worldwide — **Seoul, South Korea**
2022 Samsung Unpack Project - Web QA — *2022.6–2022.09*
- Conducted QA for product description pages and collaborated with overseas teams.
- Developed an interest in software development, leading to a Computer Science minor.

Ubiquitous & AI Lab — **Seoul, South Korea**
Undergraduate Research Assistant — *2022.12–2023.12*
- Studied machine learning fundamentals and transformer attention modules through research papers and advisor discussions.
- Developed a stock price prediction model for the KRX competition using TensorFlow and advanced deep learning techniques.

Immersion — **Seoul, South Korea**
Autonomous Driving Developer — *2023.12–2024.09*
- Built outdoor HD maps and implemented SLAM pipelines for autonomous robots using 3D LiDAR and ROS2.
- Solved technical challenges like sunlight interference and resource limits on Jetson Orin.

Machine Perception and Intelligence Lab (GIST) — **Gwangju, South Korea**
Research Intern — *2024.06–Present*
- Designed LiDAR reconstruction models using Point Transformer V3 and Perceiver architectures.
- Conducted research on localization-related models and advanced 3D reconstruction techniques

Activities

Kwangwoon University — **Baram**
Academic Research Club — *2020.03–2020.11*

Kwangwoon University — **Robotics Department**
Student Council — *2020.03–2020.11*

Republic of Korea Army — **Military Instructor**
Military Service — *2020.12–2022.05*

Projects

LiDAR Upsampling for Localization: Researched deep learning-based point cloud upsampling to improve localization, using PointTransformer V3 and TULIP as baselines.

HD Map Implementation: Developed a high-definition map for advertising robots using ROS and FAST-LIO2. Researched sunlight interference solutions.

Attention Robot Implementation: Implemented Stanley controller, path planning, and NDT-OMP localization in ROS2, optimizing performance with OpenMP and Eigen.

Stock Prediction Model: Built a Transformer-based stock prediction model using KOSPI data.

SmartFarm worker assistant Robot: Developed end-to-end system for mushroom harvesting robot.

Articles

Junseo Min, Inseok Jeon, Sumin Lee, Yunkyo Hong, Yaesop Lee, "AI-Based Worker Assistant Robot: Shaping the Future of Smart Farms", ICROS 2023