Heewon Lee

Robotics & AI Engineer · Kwangwoon University

Last modified: Jun, 2026

CONTACT INFORMATION

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EXPERIENCE

RLWRLD

Seoul, Korea / San Francisco, USA

FDE (Robotics Deployment Team) Intern — *Jan 2026 – Jun 2026*

Robot Demonstrations

- **Microsoft AI Tour:** Led an RB-Y1 robot demo (manipulation + voice interaction) end-to-end, drawing strong audience engagement at the event. [press]
- **Lightyear Residency Demo Day (San Francisco):** Trained a grasping model on 200 demonstration episodes that achieved a 100% zero-shot grasp success rate, demonstrated live to U.S. investors.
- **RLDX-1 Launch ("Dexterity Night"):** Led the launch demo end-to-end as technical lead — implemented a multi-task VLA model (>95% task success rate) trained on ~5 hours of demonstration data for the sock sorting/handover task, and owned data preprocessing, roll-out testing, and on-site technical operation. [press]

Robot System Development

- **Multi-robot bring-up & teleoperation:** Reviewed and internalized existing manuals to bring up and teleoperate 5 robot platforms (RB-Y1, OpenArm, OMY, AI Worker, Big YAM), and developed the teleoperation software they required — e.g., building Big YAM's teleoperation system from scratch and integrating a Manus glove with MoveIt for the AI Worker.

ROBOTIS

Seoul, Korea

AI Software Team Intern — *Jun 2025 – Dec 2025*

- **LLM-based OMX control:** Built an example project demonstating natural-language control of the OMX robot. [video]
- **GR00T 1.5 ROS2 SDK:** Developed an SDK enabling GR00T 1.5 inference directly in ROS2 via CycloneDDS, removing the need for ZMQ conversion. [repo]
- **GAEMI field testing:** Ran field tests for the GAEMI delivery robot, supporting real-world validation and debugging.
- **Technical demo content:** Produced technical demonstration videos for the ROBOTIS OpenSource Team YouTube channel. [channel]

EDUCATION

Kwangwoon University

Seoul, Korea

B.S. in Robotics, Intelligent Systems Major — *Mar 2022 – Feb 2026*

Area: Physical AI, Imitation Learning, Vision-Language-Action (VLA) Models, Deep Learning, Human-Robot Interaction, Computer Vision

Academic Advisor: Prof. Jaekwang Nam

Thesis: "Development of an AI-Based Assistive Eyewear System for Safe Walking of the Visually Impaired" (Advisor: Prof. Yesop Lee)

Activities: Student Council — Secretariat Director (2023–2024)

PUBLICATIONS

[1] Dongyoung Kim, Huiwon Jang, …, **Heewon Lee**, …, Jinwoo Shin. "RLDX-1 Technical Report." *arXiv preprint arXiv:2605.03269 [cs.RO].* 2026.

[2] Yeho Shin, Minju Kwon, **Heewon Lee**, Yesop Lee. "Development of an AI-Based Assistive Eyewear System for Safe Walking of the Visually Impaired." *In: 2025 40th ICROS Annual Conference (Institute of Control, Robotics and Systems).* 2025.

PROJECTS

Assistive System for the Visually Impaired (NextSight) [repo]
ROS2 · YOLO · On-device AI · Object Detection · Embedded Systems
On-device assistive system (smart glasses, smart cane, and smart glove) that detects road obstacles in real time and guides users through voice feedback or braille output.

Natural Language-Based OMX Control System [repo]
ROS2 · Gazebo · Python · Natural Language Processing · OMX Control
Rule-based control system that interprets natural-language commands and dynamically maps them to OMX robot motions, enabling intuitive human-robot interaction through text.

ROBOOK: Autonomous Book-Picking Robot [video]
Arduino · Dynamixel · Mecanum Wheels · QR Code Recognition · Embedded Systems
6-DOF autonomous robot that identifies specific books via QR-code recognition and transports them to a checkout area using omnidirectional mecanum drive.

Portable Battery Rental System Using Temi Robot [video]
JavaScript · Firebase · Android Development
Autonomous battery-rental service on the Temi robot with real-time inventory monitoring, autonomous delivery, and mobile-app control synced to a live database.

HONORS AND AWARDS

Grand Prize, Creative Engineering Assistive Technology Contest — Kwangwoon University 2025
As team leader, developed an assistive system for the visually impaired; recognized for innovation and social impact.

Academic Progress Award — Kwangwoon University 2024
Recognized for significant academic growth and continuous performance improvement.

Best Study Group Award — Kwangwoon University 2023
Awarded as team leader for outstanding performance and collaboration in an academic study group.

Grand Prize, FEDEC Project Exhibition (Festival of Engineering Design and Creativity) — Kwangwoon University 2022
For 'Robook', an autonomous book-carrying robot; recognized for technical excellence and creativity.

Academic Excellence Scholarship — Kwangwoon University 2022
Awarded for ranking within the top 10% of the class.

SKILLS

Programming Languages	Python, C, C++
AI & Robot Learning	Pytorch, Deep Learning, Imitaion Learning, VLA, YOLO
Robotics & Tools	ROS2, Mujoco, Linux, Docker, Git, pixi
Languages	Korean (Native), English (Business level)