Seungheon **Lee**

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Work Experience

Applied Intuition
Seoul, S.Korea

Application Engineer
May 2026 - Present

- Bringing Applied Intuition's self-driving stack (SDS) to Korea by operating the HQ-built data loop locally, from zero-shot baseline evaluation to data collection, upload, and post-processing, and translating findings into technical direction for customers.
- Proposed a hardware-in-the-loop (HIL) setup with a Tier-1 automotive sensor supplier to capture and replay raw, pre-ISP sensor data for evaluating its imaging and sensing technology on the SDS; serving as Korea-side DRI for the build.

Hyundai Motor Company
Gyeonggi, S.Korea

Research Engineer (Technical PM)
Jan. 2025 - May 2026

- Led project management for a large-scale (600+ personnel) Robotaxi production project.
- Minimized risks to critical milestones (e.g., certification, firmware deployment) by proactively negotiating test vehicle production capacity and implementing a priority-based resource allocation strategy.
- Collaborated with legal and security departments to review the consistency of project deliverables, proactively identifying and addressing potential regulatory and security risks.

Samsung Research
Seoul, S.Korea

Software Engineer Intern
Jul. 2024 - Aug. 2024

- Developed a monitoring system for LLM API servers, addressing previously unimplemented functionalities for an upcoming service launch.
- Built Kubernetes clusters and set up a Dev server to support scalable infrastructure and system development.
- Collaborated with administrators to identify and implement key features, including detailed API analytics and real-time alert systems.

Robotics Lab, University of Seoul
Seoul, S.Korea

Undergraduate Researcher
Mar. 2022 - May. 2024

- **Grand Prize**, Autonomous Robot Race Competition: Led a software architecture overhaul; this refactoring from a monolithic script to a modular framework established the robust foundation required to implement advanced algorithms, including Model Predictive Control (MPC).
- **First Place**, RoboCup Autonomous Robot Manipulation Challenge: Engineered a high-fidelity training dataset for the winning model by implementing a precise polygon labeling method and a novel data pipeline benchmarked from international competitors.
- Presented 3 research papers (2 posters, 1 oral) at academic conferences based on competition findings.

Education

University of Seoul
Seoul, S.Korea

B.S. in Mechanical Information Engineering, Top Graduate
Mar. 2019 - Feb. 2025

- GPA: 4.15 / 4.5 (Major GPA: 4.35 / 4.5)

Skills

Languages	Python, C/C++
AI & MLOps	PyTorch, Weights & Biases (W&B), MLflow, Grafana
Infrastructure & Tools	Linux, Kubernetes, Docker, MATLAB
Hardware & Sensors	LiDAR (2D, 3D), GPS, RGB-D Camera

Projects

Computer Vision AI Model Optimization for NPU-based Inference
Sep. 2024 - Dec. 2024

- Collaborated in a 2-member team for the 1st AI Semiconductor Competition, winning the **Grand Prize** (Minister of Science and ICT Award).
- Achieved up to 533% improvement in NPU utilization compared to the baseline, while simultaneously increasing quantization accuracy.
- Established an MLOps pipeline using WandB and MLflow for systematic experiment tracking and model management.

AI-powered Smart Bartending System
Mar. 2024 - Oct. 2024

- Architected and implemented the core AI engine to translate ambiguous user inputs (e.g., mood, taste) into quantitative cocktail recipes.
- Leveraged prompt engineering and few-shot learning to robustly handle qualitative data uncertainty, bypassing the need for extensive model fine-tuning.

Awards & Scholarships

Awards

2024 **Grand Prize (Minister of Science and ICT Award),** 1st AI Semiconductor Competition *Seoul, S.Korea*

2023 **First Place,** RoboCup Autonomous Robot Manipulation Challenge, hosted by MathWorks *Bordeaux, France*

2023 **Grand Prize,** Autonomous Robot Race Competition *Cheongju, S.Korea*

2023 **Excellence Award,** Engineering Research Internship Outcome Presentation *Seoul, S.Korea*

Scholarships

2023 - 2025 **OK Scholarship,** OK Scholarship Foundation

2023 - 2024 **Blue Lighthouse KB Dream Wave 2030 Promising Field Scholarship,** Korea Scholarship Foundation