



# ChangGeun Gwak

## Robotics Software Engineer

Dedicated to building human-centered robotics solutions that empower and enrich lives.

### CONTACT

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. [github.com/changgwak](https://github.com/changgwak)  
. Seoul, South Korea

### SKILLS

. Programming and Tools:  
Python, C++, SQL, ROS2,  
Nav2, OpenCV, Pytorch, Git,  
Docker

. Robotics and AI: AMR,  
Cobot, Cartesian Robot,  
Middleware Integration  
(DDS), Path Planning,  
Real-Time Systems,  
Computer Vision (CNNs),  
LLMs, RAG

. Software and Data:  
Asynchronous Processing,  
Microservices Architecture,  
Design Patterns, System  
Optimization, Database  
Design, Algorithms

### EDUCATION

. Chung-ang University, Seoul  
B.S Mechanical Engineering  
GPA: 4.42/4.5  
(Summa Cum Laude)

### LANGUAGES

Korean (Native)  
English (Intermediate)

### INTERESTS

. LLM based Robotics,  
Multimodal LLM, RL, et al.

### WORK EXPERIENCE

Control System Engineer | Samsung Electronics, South Korea  
Jan 2024 - present

- . Material Handling Automation, AI Center
- . Implemented CNN-based image classification module (Computer Vision)
- . Implemented a LLM based Chatbot Web service
- . Developed a system setup automation module


Robotics Software Engineer | Samsung Electronics, South Korea  
Jan 2022 - Dec 2023

- . Fab Automation, CTO Mechatronics Research
- . Development of Mobile Manipulator Robot Control
- . Designed a Microservice Architecture (MSA) and robot middleware-based software architecture.
- . Finite State Machine (FSM)-based control software for a Cartesian robot
- . Global path planning with A\*/Dijkstra algorithms and local control with Extended Regulated Pure Pursuit.
- . Behavior Tree-based navigation software
- . Designed and implemented an event-driven task manager
- . Co-authored a technical patent: IN-202208-002-1-KR0

System Engineer | Samsung Electronics, South Korea  
Sep 2020 - Dec 2021

- . System Automation, Data&IT Center
- . Contributed to the development of Dataflow Intelligence Engine
- . Implemented automated data validation module, resulting in a 91% reduction in manual efforts and increased data integrity

Robotics Engineer | LG Electronics, South Korea  
Jan 2020 - Aug 2020

- . Manipulator Development, Robot Business Center
- . Contributed to the development Cobot Control Software
- . CES 2020:  LG at CES 2020 - LG ThinQ CLOi's Table

### OTHERS

- . Developed and published a Python package on PyPI: [python-automation](https://pypi.org/project/python-automation/)
- . Guest lecturer (Online & On-Campus) : Introduction to Robotics in R&D Engineering in Seoul National University of Science and Technology, HanKong National University, Sungkyunkwan University, Hanyang University, and six other institutions.