MinJun Chang

minjunchang@gatech.edu | 470-581-5124 | Website | Linkedin

Education

Georgia Institute of Technology, Ph.D. in Civil Engineering — Aug 2025 - Current
- **Robotics and Intelligent Construction Automation Laboratory**

Yonsei University, B.S. in Mechanical Engineering — Mar 2019 - Feb 2025

Research

RICAL Group, Georgia Institute of Technology – Atlanta, GA, USA — Aug 2025 – Current
Graduate Research Assistant, Supervisor: Dr. Yong K. Cho
- Developing IMU-based worker motion recognition and zone-level localization for construction safety
- Designing perception-to-decision systems for vehicle monitoring and risk assessment in work zones

HARMONIC Group, Georgia Institute of Technology – Atlanta, GA, USA — Aug 2025 – Current
Graduate Research Assistant, Supervisor: Dr. Francis Baek
- Developing humanoid motion control for dexterous tasks in construction and manufacturing environments
- Studying human-robot interaction and practitioner perception of robotic automation for field deployment

Dynamic Robotic System Laboratory, Seoul National University – Seoul, KR — Jul 2024 – Dec 2024
Undergraduate Research Assistant, Supervisor: Dr. Jaeheung Park
- Model-free reinforcement learning framework with a state estimator neural-network fo bipedal locomotion

Publications

Real-Time Temporal Convolution based Worker Motion Recognition with Three IMU Sensor Combinations, 43rd International Symposium on Automation and Robotics in Construction, Jun 2026
MinJun Chang, Sai Machiraju, Francis Baek, Yong K. Cho†

Field Evaluation of a Wearable Framework for Worker Motion Recognition and Zone-Level Localization, 43rd International Symposium on Automation and Robotics in Construction, Jun 2026
MinJun Chang, S.K. Machiraju, Yong K. Cho†

Large Language Models as Virtual Personas to Estimate Construction Practitioners' Perceptions of Robotic Automation, International Conference on Computing in Civil Engineering, Jun 2026
Francis Baek, ***MinJun Chang***, Eunbee Kim

A Perception-to-Decision Vehicle Monitoring System for Highway Work-Zone Safety, International Conference on Computing in Civil Engineering, Jun 2026
S.Y. Kim, ***MinJun Chang***, S.K. Machiraju, Yong K. Cho†

Robust Symmetric Bipedal Locomotion Development via Simultaneous State Estimator Neural Network Training, The 20th Korea Robotics Society Annual Conference, Poster Feb 2025
MinJun Chang, Jaeyong Shin, Jaeheung Park†

State prediction-based control input delay compensation for autonomous driving systems, The 18th Korea Robotics Society Annual Conference, Oral Feb 2023
MinJun Chang, H.W. Nam, S.Y. Choi, J.H. Yang, J.H. Yang, Jongeun Choi†

Patents and Copyrights

The Urine Examination Apparatus and Controlling Method of the Same — Mar 2026

KR10-2944428-00-00, Registered-Active

Autonomous Driving Auxillary Cart Robot for Manufacture — Aug 2024

KR10-2024-0177135, under prosecution

Eye Tuner: Media Literacy Program based on Pupil Tracking by Computer Vision Nov 2021

Korea Copyright Commission, C-2024-039138, Registered-Active

Professional Experience

Hanwha Systems(Space&Defense), Satellite Software Engineer Jan 2025 – May 2025

- ARMv7 MCU internal communication software programming for Small Synthetic Aperture Radar (SAR) Satellite

GOLE Robotics, Robotics Engineer Apr 2024 – Jun 2024

- Implemented global and local robot path planning algorithm on ROS2 for construction delivery robot WERO
- Developed actuator controller package with C++/Python binding enabling python API usage of C++ source

DRIMAES, Embedded Software Engineer Oct 2022 – Mar 2024

- Linux, ARM MCU software/firmware programming for various products
- Developed various communication protocols (Serial, MQTT, REST, CAN)
- Implemented multiple virtual container management technique on cross-platform systems

SIOT Infotech, Embedded Software Engineer Feb 2022 – Oct 2024

- Developed embedded software for Mediatek, ESP chipsets and enhanced custom OpenWRT OS kernel

Selected Awards

1st place, National ICT Smart Device Competition, Korean Ministry of Science and ICT Aug 2024

- Awarded by **the Minister of Science and ICT of Republic of Korea**
- Led a team of 5 in developing an Autonomous Manufacture Assistant CARTRASCHE

1st place, 2022 Autonomous Driving Robot Racing Contest, Korean Robotics Society (KRoS) Nov 2022

- Participated as Localization team member
- Developed a control algorithm utilizing LiDAR, IMU, and GPS sensor fusion for collision avoidance

Selection, Hanium Contest, Federation of Korea Information Industries Nov 2021

- Led a team of 4 in developing Personalized Content Literacy program EYE-TUNER
- Implemented pupil tracking algorithm for the program

Projects

Awaresite : Intelligent PPU System for Construction Productivity and Safety Aug 2025 - Current

- Deep-Learning based worker motion recognition using IMU data
- Zone scale indoor localization using BLE beacons

CARTRASCHE: Autonomous Driving Auxiliary Cart Robot Mar 2023 - Jul 2024

- Developed autonomous driving mobile robot with rotating shelf system using SLAM for navigation in ROS
- Implemented custom RC filter and encoder-less motor control algorithm for activation
- Managed the project flow and system overall management
- Tools Used: C++, Python, ROS, LinuxOS

UAV Fleet Management System for Robot Cluster in Factory Aug 2023 - Dec 2023

- Implemented task scheduling and allocation algorithm based on order status for multi-robot network
- Tools Used: Python, ROS, MQTT

FennecBot: Industrial Anomaly Detection Mobile Robot May 2023 - Aug 2023

- Developed multi-modal deep learning network for pipeline anomaly detection and the classification of pipeline leakage using RGB camera, and ultrasonic/acoustic sound camera
- Operated on Scout mini with line-tracing algorithm detecting pipe leakage within Hyundai HI. factory

Honors

Federico Stubbe Graduate Student Fellowship, Georgia Institute of Technology Aug 2025

Fellowship granted to competent graduate students

Next Generation Engineer, Institute for Promotion of Engineering and Science of Korea Dec 2024

Honor society for outstanding young engineers in Republic of Korea

Technologies

Programming: Python, C++, C, JavaScript, MATLAB

Frameworks/Tools: ROS, IsaacSim/Lab, PyTorch, Docker, AWS, FastAPI, Solidworks, Fusion360

Hardware: ARM V7, Jetson Xavier, Jetson Nano, RaspberryPi, Arduino, STM32, ESP32, Unitree Go1

Languages: Korean(Native), English(Fluent), Japanese(Median)