Changhun **Lee**

Robot Engineer · Firmware Software Engineer

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"Hope for the world."

Summary

I'm Changhun Lee, who want to become Robot Engineer. My research interests are wearable robot(Soft exoskelton, Hard exoskelton, etc.) for muscle strength and rehabilitation, HRI, Manipulator, Medical Robot, Control System and Firmware. I would like to help disabled people with my technology and make a world where everyone can be happy.

Research Interest

Wearable Robot Soft & Hard Exoskelton
HRI Haptic
Medical Robot Surgery Robot & Manipulator

Education

KwangWoon University *Seoul, S.Korea*

B.S. in School of Robotics *Mar. 2016 - Feb. 2022(Expected)*

- **Total GPA :** 4.12/4.50 **Major GPA :** 4.32/4.50
- **Club :** BARAM(Robotics Academic Group) - [2020 Club president]

Work Experience

KIST(Korea Institute of Science and Technology) *Seoul, S.Korea*

Student Intern(Advisor Dr. Donghyun Hwang) *Sep. 2020 - Feb. 2021*

- Research on HaptiCube.
- Research on Pose estimation with magnetic sensor
- Participate in Smartfarm auto-driving system Project

Sunduck High school *Seoul, S.Korea*

Teacher *Jun. 2020 - Sep. 2020*

- Firmware Software Education(Arduino).
- 3D modeling Education.

Honors & Awards

Awards

2019.12 **Finalist**, [17th] The World Embeded Software Contest 2019 *Seoul, S.Korea*
2020.08 **3rd Place**, Cham-bit Award *Kwangwoon univ.*
2020.08 **Top**, The first semester of the third grade *Seoul, S.Korea*

HONORS

2020.09 **Full tuition Scholarship**, For Top seat last semester *Seoul, S.Korea*

Skills

Programming C/C++, Python, Matlab
CAD Software Solidworks, Catia
DevOps ROS
Languages Korean, English

Extracurricular Activity

Smart Factory with autocharge-scheduling

Seoul, S.Korea

Hardware Modeling & Design Close loop control System

May. 2019 - Dec. 2019

- 17th The World Embedded Software Contest 2019 project.
- A system for efficiently operating a mobile robot used in a factory in consideration of the remaining battery, workload, etc.
- Modeling mobile robots, factory and Designing Close loop System to Control System.
- The source code related to this project is on my **Github**.

Smart Walker[Cham-bit award]

Seoul, S.Korea

Hardware Modeling & Design Close loop control System

Dec. 2019 - Oct. 2020

- KwangWoon Univ.'s Cham-bit award project.
- I wanted to prevent traffic accidents for the elderly.
- Walker to ensure the safety of the elderly people.
- Regardless of the terrain, it speeds up at a constant speed.
- The source code related to this project is on my **Github**.

Javis

Seoul, S.Korea

Personal Project

Aug. 2020 - Nov. 2020

- Mobile manipulator for helping disabled people.
- To implement more diverse behaviors, The manipulator has 6DOF.
- To study ROS, all systems are implemented in ROS .
- The source code related to this project is on my **Github**.

HaptiCube

Seoul, S.Korea

KIST project

Aug. 2020 - Dec. 2020

- I implement simulations for interaction between HaptiCube and people.
- Based on OpenGL, there is a version that utilizes Computer Vision and a version that is based on visual effects.
- The source code related to this project is on my **Github**.

SmartFarm

Seoul, S.Korea

KIST project

Sep. 2020 - Nov. 2020

- Creating a auto-driving robot to help Korean melon farm workers.
- All systems are implemented in ROS.
- To help farmers, we made a mobile robot with various functions.

Magnet Pose Estimation

Seoul, S.Korea

KIST project

Dec. 2020 - Feb. 2021

- We implement a magnet sensor system to follow the location of continuum mechanism.
- We conducted a study to process and analyze Magnet's data and use it for Pose Estimation.

Next Generation Wireless Vehicle Charging Robot

Seoul, S.Korea

Capstone Project

Mar. 2021 - Jun. 2021

- We implement a Omnwheel mobile robot to wirelessly charge the electric car.
- Create a mobile robot using Cascade Motor Control.
- All systems are implemented in ROS.
- The source code related to this project is on my **Github**.

Publication

International

2020.12 **IEEE TMECH 2021**, Development of an Embedded Sensor System for a 5-DOF Finger-wearable Tactile Interface, by Byeongkyu Lim, Changhun Lee, Donghyun Hwang — *IEEE/ASME AIM*