



SeongChang Park

Interested in LiDAR SW

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- <https://bigbigpark.github.io>
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Social Network

- Github
- Instagram
- Youtube

Languages

- Korean ●●●●●
- English ●●●●●

Tech Skills

- C++
- Python
- Matlab
- LabVIEW

Experience

Research:

- 2022-2023 **Development of A Sensor Fusion-Based Global Map Building Algorithm For Autonomous Navigation**
Supported by Seadronix
We developed a sensor fusion-based global map building algorithm for unmanned surface vehicles(USVs). Our algorithm can be used to navigate autonomously on ocean environment.
- 2021-2027 **Swarm-operated Control System for Micro Ground Robot**
Supported by KRIT
We implemented optimization-based formation control algorithm. We also developed a hierarchical global path planning method for swarm robots. With our proposed method, the swarm can keep and change their formation without collision while generating the whole path efficiently.
- 2019-2025 **Unmanned Swarm CPS Research Laboratory**
Supported by ADD
We propose distributed MPC-based formation control algorithm. The multi-agent keeps their formation stably and can change the shape without collision. The proposed decentralized algorithm runs real-time and was tested on each hardware.
- 2020-2021 **Localization of Electrical Vehicle Remote Charge PAD**
Supported by Hyundai NGV
I joined this project about localization with the help of Hyundai NGV. Our team proposed an algorithm that localizes the vehicle position using UWB RF sensors without any external information.

Project:

- 2021 **LiDAR-based Object Detection** Autonomous Driving Challenge
Supported by Hyundai Motor Group
I implemented an algorithm that detects curb, lane and car on urban environment. Main sensors I used are two 3D LiDAR sensors, one is 64ch for finding near curb and lane, the other is 32ch for the detection of car which is far from ego one.
- 2020 **Prediction Traffic Signal using V2X** Autonomous Vehicle Competition
Supported by Ministry of Trade, Industry and Energy
I mapped all possible intersection's traffic signal using V2X. Our AV can move flexibly using the predicted traffic signal.
- 2020 **Traffic Signal Detection** International Student AV Car Competition
Supported by TS, KATECH
Detection which traffic light is red, orange or green and something mixed. I used supervised learning(YOLOv4) using a camera.

Publications

- 2022 **Distributed model predictive formation control of a UGV swarm guaranteeing collision avoidance**
IEMEK Journal of Embedded Systems and Applications, in Korean.
Seongchang Park and Seungmok Lee
- 2021 **Distributed model predictive formation control for unmanned ground vehicles via real-time optimization**
International Conference on Control, Automation and Systems (IC-CAS).
Seongchang Park and Seungmok Lee

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Education

2022 – 2023	Master's Science Degree in Future Convergence Technology	Soonchunhyang University
2021 – 2022	Master's Science Degree in Mechanical Engineering (<i>Transfer after dropout</i>)	Keimyung University
2015 – 2021	Bachelor's Science Degree in Electronic Engineering (GPA: 4.41/4.5)	Keimyung University

Honors

2022	Graduate Student Research Scholarship Full Tuition	Soonchunhyang University
2020-2	Academic Excellent Scholarship One-third Tuition	Keimyung University
2020-1	Academic Excellent Scholarship One-third Tuition	Keimyung University
2020-1	Principle Special Scholarship For the students who got great scores	Keimyung University
2019-2	K-STAR T Scholarship For K-STAR Members in the school	Keimyung University
2019-2	Academic Excellent Scholarship Half Tuition	Keimyung University
2019-2	Principle Special Scholarship For the students who got great scores	Keimyung University
2019-1	Academic Excellent Scholarship Full Tuition (Top student in the department)	Keimyung University
2019-1	Language Skill Improvement Scholarship In the case of TOEIC	Keimyung University
2019-1	Principle Special Scholarship For the students who got great scores	Keimyung University
2018-2	Academic Excellent Scholarship Half Tuition	Keimyung University
2018-1	SAP Overseas Study Scholarship For all possible expenses in Philippines	Keimyung University
2018-1	Principle Special Scholarship For the students who got great scores	Keimyung University
2016-1	Academic Excellent Scholarship Full Tuition (Top student in the department)	Keimyung University
2015-2	Academic Excellent Scholarship Half Tuition	Keimyung University

Awards

2021	Challenge Prize for Autonomous Driving Challenge	HMG
2021	Special Prize for Autonomous Driving Challenge	Mayor in Seoul
2020	3rd Prize International Student AV Car Competition	TS
2020	Special Prize in Capstone Design	Keimyung Univ.
2020	1st Prize at ICT Advanced Future Technology Convergence Camp	Yeungnam Univ.