Seongchang Park

Robotics SW Engineer

+82)-10-3088-4871

https://bigbigpark.github.io

scsc1125@gmail.com

Social Network

Github

Instagram

Youtube

Languages

Korean

English

Tech Skills

C++

Matlab

Python

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 localization project with the help of Hyundai NGV. Our team proposed an algorithm that localizes the vehicle position using UWB RF sensors.

Project:

2021 **LiDAR-based Object Detection** Autonomous Driving Challenge
Supported by Hyundai Motor Group
We implemented an algorithm that detects curb, lane and vehicle on road environment. Main sensors we used are two 3D LiDAR, one is 64ch for nearby curb and lane, the other is 32ch for the detection of car 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

Seongchang Park

Robotics SW Engineer

Education

2021 – Present	**Master's Science Student** in Future Convergence Technology	Soonchunhyang University
2015 – 2021	**Bachelor's Science Degree** in Electronic Engineering (**GPA: 4.41/4.5**)	Keimyung University

Honors

2022-2023	**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.

Extra-Curricular Activities

Tech Blog	I write things about helpful code, tutorial and software guidance
Competition	I have a lot of experience for autonomous vehicle competition