Yunwoo Lee

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RESEARCH AREAS

Unmanned vehicle trajectory planning, Multi-agent system, Aerial tracking

EDUCATION

SEOUL NATIONAL UNIVERSITY, Seoul, College of Engineering, Philosophy of Doctor, Mechanical and Aerospace Engineering,
Projected February 2025 **Sep. 2019 ~ Current.**

- Lab for Autonomous Robotics Research (LARR, https://larr.snu.ac.kr)
- Principle Investigator: H. Jin Kim
- Cumulative GPA: 4.14 / 4.3 (Major GPA: 4.14 / 4.3)

SEOUL NATIONAL UNIVERSITY, Seoul, College of Engineering, Bachelor of Science, Electrical and Computer Engineering,
Mar. 2012 ~ Feb. 2019

- Cumulative GPA: 3.96 / 4.3 (Major GPA: 4.12 / 4.3), *Summa Cum Laude*

PUBLICATIONS

JOURNAL

- BPMP-Tracker: A versatile Aerial Target Tracker Using Bernstein Polynomial Motion Primitives (IEEE Robotics and Automation Letters **(RA-L)**, 2024)
- QP Chaser: Polynomial Trajectory Generation for Autonomous Aerial Tracking (IEEE Transactions on Automation Science and Engineering **(T-ASE)**, conditionally accepted)
- DMVC-Tracker: Distributed Multi-Agent Trajectory Planning for Target Tracking Using Dynamic Buffered Voronoi and Inter-Visibility Cells, IEEE Robotics and Automation Letters **(RA-L)**, submitted)
- Mono-Camera-Only Target Chasing for a Drone in a Dense Environment by Cross-Modal Learning (IEEE Robotics and Automation Letters **(RA-L)**, 2nd author)
- DLSC: Distributed Multi-Agent Trajectory Planning in a Maze-Like Dynamic Environments Using Linear Safe Corridor (IEEE Transactions on Robotics **(T-RO)**, 2nd author)
- Autonomous Aerial Dual-Target Following Among Obstacles (IEEE Access, 2nd author)
- Multirobot Collaborative Monocular SLAM Utilizing Rendezvous (IEEE Transactions on Robotics **(T-RO)**, 2nd author)

CONFERENCE

- Target-Visible Polynomial Trajectory Generation within an MAV Team (IEEE/RSJ International Conference on Intelligent Robots and Systems **(IROS)**, 2021)
- Navigation-Assistant Path Planning within an MAV Team (IEEE/RSJ International Conference on Robots and Systems **(IROS)**, 2020)
- Integrated Motion Planner for Real-Time Aerial Videography with a Drone in a Dense Environment (IEEE International Conference on Robotics and Automation **(ICRA)**, 2nd author, 2020)

PROJECT WORK

Unmanned aerial/ground vehicle, Ministry of Science and Technology of Korea **Mar 2022 ~ Current.**

Drone swarm, Korean Aerospace Industries **Mar. 2022 ~ Jan. 2023**

Autonomous driving, Ministry of Science and Technology of Korea **Sep. 2019 ~ Dec. 2021**

TEACHING EXPERIENCE

SEOUL NATIONAL UNVIERSITY, Siheung campus, South Korea

- Arrange hands-on course about PID control for micro quadrotors (for 20 students, with 10 teaching assistants)

WORK EXPERIENCE

INTERNSHIP: Infineon Technologies Korea

Jan. 2018 ~ Aug. 2018

- Designed a 3-phase inverter using a 32-bit MCU
- Run a sensor-less motor control algorithm for BLDC motors

INTERNSHIP: Electrical Engineering & Power Electronics LAB**,** Seoul National University, (Supervisor: Sul, Seung Ki)

Nov. 2016 ~ Sep. 2017

- Worked on constructing an experimental set for Si-C MOSFET test in Elevator Motor Drive
- Constructed a M-G set for implementing a IPMSM motor control algorithm in a course for Korean companies

AWARDS

SAMSUNG HUMANTECH PAPER AWARD, 27th

- Silver prize (Title: Multirobot Collaborative Monocular SLAM Utilizing Rendezvous, as coauthor)