Jungwon Park, Ph.D.

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Research Interests

Multi-Agent Trajectory Planning, Distributed Robot System, Collision Avoidance, Deadlock resolution.

Education

2020 – 2023 **Ph.D., Aerospace Engineering, Seoul National University** in Seoul, Rep. of Korea.
Thesis title: *Decentralized Trajectory Planning for Quadrotor Swarm in Cluttered Environments with Goal Convergence Guarantee.*
Advisor: H. Jin Kim

2018 – 2020 **M.S., Aerospace Engineering, Seoul National University** in Seoul, Rep. of Korea.
Thesis title: *Trajectory Planning for Multiple Quadrotors using Relative Safe Flight Corridor and Relative Bernstein Polynomial.*
Advisor: H. Jin Kim

2012 – 2018 **B.S., Electrical and Computer Engineering, Seoul National University** in Seoul, Rep. of Korea.

2010 – 2012 **Hansung Science High School** in Seoul, Rep. of Korea.
Early graduation.

Research Publications

Journal Articles

1. **J. Park**, Y. Lee, I. Jang, and H. J. Kim, "Dlsc: Distributed multi-agent trajectory planning in maze-like dynamic environments using linear safe corridor," *IEEE Transactions on Robotics*, pp. 1–20, 2023. DOI: 10.1109/TRO.2023.3279903.
2. **J. Park**, D. Kim, G. C. Kim, D. Oh, and H. J. Kim, "Online distributed trajectory planning for quadrotor swarm with feasibility guarantee using linear safe corridor," *IEEE Robotics and Automation Letters*, vol. 7, no. 2, pp. 4869–4876, 2022.
3. B. F. Jeon, Y. Lee, J. Choi, **J. Park**, and H. J. Kim, "Autonomous aerial dual-target following among obstacles," *IEEE Access*, vol. 9, pp. 143 104–143 120, 2021.
4. **J. Park** and H. J. Kim, "Online trajectory planning for multiple quadrotors in dynamic environments using relative safe flight corridor," *IEEE Robotics and Automation Letters*, vol. 6, no. 2, pp. 659–666, 2020.

Conference Proceedings

1. I. Jang, **J. Park**, and H. J. Kim, "Safe and distributed multi-agent motion planning under minimum speed constraints," in *2023 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2023.
2. **J. Park**, I. Jang, and H. J. Kim, "Decentralized deadlock-free trajectory planning for quadrotor swarm in obstacle-rich environments," in *2023 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2023.

3. Y. Lee, **J. Park**, B. Jeon, and H. J. Kim, "Target-visible polynomial trajectory generation within an mav team," in *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2021, pp. 1982–1989.

4. **J. Park**, J. Kim, I. Jang, and H. J. Kim, "Efficient multi-agent trajectory planning with feasibility guarantee using relative bernstein polynomial," in *2020 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2020, pp. 434–440.

5. **J. Park** and H. J. Kim, "Fast trajectory planning for multiple quadrotors using relative safe flight corridor," in *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2019, pp. 596–603.

Projects

2022 – 2023 The development of online path planning algorithm for multi-robots.
Hyundai Motor Company.
Project Leader

2021 – 2022 Development of autonomous assistive robots for wheelchairs.
Ministry of Science and ICT, Republic of Korea.
Researcher

2019 – 2021 Development of A.I. based recognition, judgement and control solution for autonomous vehicle corresponding to atypical driving environment.
Ministry of Science and ICT, Republic of Korea.
Project Leader

2018 – 2022 Development of multi-robot integrated control & operation system for supporting compound disasters accident management.
Ministry of Trade, Industry and Energy, Republic of Korea.
Researcher

Honors and Skills

Awards

2022 **Top Prize** (president award) in Korea Aerospace Industries (KAI) Aerospace Paper Award.

2020 **Multi-Robot Systems Award Finalist** in IEEE International Conference on Robotics and Automation (ICRA 2020).

Scholarship

2020–2022 Brain Korea 21 (BK21) Scholarship.

2014-2017 National Science & Technology Scholarship.

2013-2017 GE Foundation Scholarship.

2013 Academic Excellent Scholarship.

Skills

Coding C++ , Matlab, Python, LaTeX.

Platform ROS1, ROS2, Unreal Engine, AirSim, CARLA.

Reference

Prof. H. Jin Kim, Professor, Seoul National University, hjinkim@snu.ac.kr