# Dabin Kim

PhD Candidate

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## Education

**Seoul National University**                                                                       *Seoul, South Korea*

PhD & MS Integrated Program, Mechanical & Aerospace Engineering                    *2019.03.01 – Expected 2026.02.28*

- Advisor: Prof. H. Jin Kim
- Laboratory for Autonomous Robotics Research (LARR)

**Seoul National University**                                                                       *Seoul, South Korea*

BS, Mechanical & Aerospace Engineering                                                        *2015.03.01 – 2019.02.28*

- **Summa Cum Laude**

## Professional Experience

2020-2021  **Teaching Assistant**, Aerospace Engineering, SNU

2018  **Undergraduate Research Assistant**, (Advisor: Pf. H. Jin Kim) Aerospace Engineering, SNU

## Publications

### Under Review

Taekbeom Lee*, **Dabin Kim***, and H. Jin Kim, "HERE: Hierarchical Active Exploration for Radiance Field with Epistemic Uncertainty Minimization,", IEEE Robotics and Automation Letters, 2025, *: Equal Contribution

Youngjae Lim, **Dabin Kim**, and H. Jin Kim, "Personalized Autonomous Driving via Optimal Control with Clearance Constraints from Questionnaires,", IEEE ICRA, 2025.

### In Preparation

**Dabin Kim**, Matthias Pezzutto, Luca Schenato, and H. Jin Kim, "Addressing Limited Field-of-View and Occlusion in Vision-Based Motion Planning of Mobile Robots,", Manuscript in preparation for journal publication, 2025.

### Journal

**Dabin Kim**, Youngsoo Han, and H. Jin Kim, "Safe Reactive Control for Autonomous Navigation in Unknown Environments via Probabilistic Maps,", IEEE Access, 2025.

Sunwoo Hwang, Inkyu Jang, **Dabin Kim**, and H. Jin Kim, "Safe Motion Planning and Control for Mobile Robots: A Survey," International Journal of Control, Automation and Systems, 2024.

Jungwon Park, **Dabin Kim**, Gyeong Chan Kim, Dahyun Oh, and H. Jin Kim, "Online Distributed Trajectory Planning for Quadrotor Swarm with Feasibility Guarantee using Linear Safe Corridor," IEEE Robotics and Automation Letters (RA-L), Vol. 7, Issue. 2, pp. 4869-4876, 2022.

Dohyun Jang, Jaehyun Yoo, Clark Youngdong Son, **Dabin Kim** and H. Jin Kim, "Multi-robot active sensing and environmental model learning with distributed Gaussian process," IEEE Robotics and Automation Letters, Vol. 5, Issue. 4, pp. 5905-5912, 2020.

Seung Jae Lee, Dongjae Lee, Junha Kim, **Dabin Kim**, Inkyu Jang, and H. Jin Kim, "Fully-Actuated Autonomous Flight of Thruster-Tilting Multirotor," IEEE/ASME Transactions on Mechatronics, Vol. 26, Issue. 2, pp. 765-776, 2020.

### Conference

**Dabin Kim***, Inkyu Jang*, Youngsoo Han, Sunwoo Hwang, and H. Jin Kim, "Enhancing Feature Tracking Reliability for Visual Navigation using Real-Time Safety Filter", IEEE International Conference on Robotics and Automation (ICRA), Atlanta, USA, 2025.

**Dabin Kim** and H. Jin Kim. "Estimation of Constraint Admissible Invariant Set with Neural Lyapunov Function," The 63nd IEEE Conference on Decision and Control (CDC), Milan, Italy, December 16 - December 19, 2024.

**Dabin Kim** and H. Jin Kim. "Autonomous Landing of a Quadrotor on a Moving Target with Occlusion Avoidance Maneuver," International Council of the Aeronautical Sciences (ICAS), Florence, Italy, September 9 - September 13, 2024.

**Dabin Kim**, Matthias Pezzutto, Luca Schenato, and H. Jin Kim. "Visibility-Constrained Control of Multirotor via Reference Governor," The 62nd IEEE Conference on Decision and Control (CDC), Singapore, December 12 - December 14, 2023.

Minhyuk Yoon, J. Hyeon Park, **Dabin Kim**, and H. Jin Kim, "Competitive MARL for Task Assignments," The 13th Asian Control Conference (ASCC), Jeju, Korea, May 4 – May 7, 2022.

**Dabin Kim**\*, Gyeong Chan Kim\*, Youngseok Jang, and H. Jin Kim, "Topology-Guided Path Planning for Reliable Visual Navigation of MAVs," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Online Prague, Czech Republic, September 27 – October 1, 2021.

**Dabin Kim**, and H. Jin Kim, "Extraction of Visible Map Points with Semantic Observation," The 21st International Conference on Control, Automation and Systems (ICCAS), Jeju, Korea, October 12 – October 15, 2021.

Dongjae Lee, Hoseong Seo, **Dabin Kim**, and H. Jin Kim, "Aerial Manipulation using Model Predictive Control for Opening a Hinged Door," IEEE International Conference on Robotics and Automation (ICRA), Paris, France, May 31 – June 4, 2020.

**Dabin Kim**, Seung Jae Lee and H. Jin Kim\*, "Trajectory Tracking for Cooperative Transportation with T3-multirotor," International Conference on Control, Automation and Systems(ICCAS), Jeju, Korea, October, 2019.

## Honors

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|---|---|
| 2021 | **Best Poster Paper Award**, International Conference on Control, Automation and Systems |
| 2017-2018 | **National Science & Technology Scholarship**, Korea Student Aid Foundation |
| 2015-2016 | **Academic Excellence Scholarship**, Seoul National University |

## Presentations

Poster presentation at ICRA 2025 Doctoral Consortium, Atlant, U.S., May 19th, 2025.

Perception-aware Planning and Control for Vision-Based Mobile Robots. Invited talk at the Department of Information Engineering, University of Padova, Padova, Italy, September 12, 2024.

## Teaching Experience

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| Spring 2021 | **Aerospace Engineering Experiment**, Teaching Assistant |
| Spring 2020 | **Aerospace Engineering Experiment**, Teaching Assistant |
| Spring 2019 | **Engineering Mathematics 1**, Teaching Assistant |

## Skills

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| **Programming** | C/C++, Python, MATLAB |
| **Libraries & Tools** | ROS, Pytorch, LaTeX, Casadi, OpenCV, SolidWorks |
| **Languages** | Korean (Native), English (Fluent) |

## Review Activities

- IEEE Conference on Decision and Control (2023)
- IEEE Conference on Robotics and Automation (2021, 2024, 2025)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (2021, 2023, 2025)
- IEEE Robotics and Automation Letters (2021, 2023, 2024, 2025)
- IEEE Transactions on Robotics (2020)