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, Seungwoo Jung, **Dabin Kim**, Dongjae Lee, and H. Jin Kim, ”Safe Multimodal Replanning via Projection-based Trajectory Clustering in Crowded Environments,”, IEEE Robotics and Automation Letters, 2025.

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, ”Optimization-Free Visibility-Aware Planning under Limited Field of View and Occlusion Constraints,”, 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, *: Equal Contribution.

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

2025	**Top Prize**, Korea Aerospace Industries (KAI) Aerospace Paper Award
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

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

Skills

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, 2026)

- 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)