

# Hojune Kim

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## RESEARCH INTERESTS

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Robot Perception, Sensor Fusion, Optimization, 3D Vision, Aerial Robots Control

## EDUCATION

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### Seoul National University

*B.S. in Aerospace Engineering*

- GPA: 4.21/4.30(Major), 4.07/4.30(Overall)

Mar. 2019 – Aug. 2025(Expected)

*Seoul, South Korea*

### ETH Zürich

*Exchange Student in Mechanical Engineering*

Feb. 2024 – Aug. 2024

*Zürich, Switzerland*

## RESEARCH EXPERIENCE

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### DLR German Aerospace Center

*Guest Researcher, Advisor: Prof. Jinoh Lee*

- Topic : Real-time Perception for Humanoid Robot

Sept. 2024 – Feb. 2025(Expected)

*München, Germany*

### Vision for Robotics Lab

*Research Intern, Advisor: Prof. Margarita Chli*

- Topic : Continuous-Time SLAM via Gaussian Belief Propagation

Feb. 2024 – Aug. 2024

*ETH Zürich*

### Robust Perception and Mobile Robotics Lab

*Research Intern, Advisor: Prof. Ayoungh Kim*

- Topic : Robust mmWave Radar Inertial 3D Odometry

Jan. 2023 – Mar. 2024

*Seoul National University*

### Satellite Geophysics Lab

*Research Intern, Advisor: Prof. Duk-jin Kim*

- Topic : Real-time flood monitoring system via segmentation using satellite SAR image

Aug. 2020 – May. 2021

*Seoul National University*

## PUBLICATION

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### International Conference

- (Oral) H. Kim, H. Jang and A. Kim. 2D Ego-Motion with Yaw Estimation using Only mmWave Radars via Two-Way weighted ICP. **ICRA2024 Workshop on Radar in Robotics**, Yokohama, Japan, 2024.

## TECHNICAL EXPERIENCE

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### J.MARPLE, Autonomous Flight Drone Company

*Project Intern*

- Compared Lidar-Inertial Odometry algorithms for embedded drone system

Sept. 2023 – Dec. 2023

*Seoul, South Korea*

### AI Tech Play(KAIT Foundation), Non-Profit Organization for AI education

*Tech/Assembly Team Leader*

- served as Organizer : AI RC-car competition for children nationwide(over 200 students participated)
- served as Developer : Modeled and manufactured AI RC-car system

Feb. 2021 – Aug. 2021

*Seoul, South Korea*

## AWARDS & SCHOLARSHIPS

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Awards:

### Gold Prize, International Student Car Competition Autonomous Driving Sector

*Ministry of Land, Infrastructure and Transport, Republic of Korea*

Oct. 2021

### Minister of National Defense Award, Minister of Defense Startup Competition

*Ministry of National Defense, Republic of Korea*

Dec. 2022

### Final Selected, Star-Exploration Startup Support Project

*Korea Aerospace Research Institute(KARI)*

Feb. 2021

<b>Certificate of Appreciation(AI Tech Play)</b> <i>Dean, College of Engineering in Seoul National University</i>	Jun. 2021
<b>Bronze Prize, Human Tech Paper Award</b> <i>Samsung Electronics</i>	Aug. 2018

#### Scholarships:

<b>Korea-Germany Junior Research Fellowship Support</b> , Max Planck POSTECH • Full coverage of expenses during in DLR as a guest researcher	Sept. 2024
<b>Kwanjeong Undergraduate Scholarship</b> , Kwanjeong Educational Foundation • Full coverage of junior and senior tuition & stipend	Mar. 2021
<b>Global Leadership Program Scholarship</b> , Seoul National University	Spring 2024
<b>Undergraduate Research Internship Scholarship</b> , Seoul National University	Mar. 2020
<b>Merit-based Scholarship</b> , Seoul National University	Fall 2019, Spring & Fall 2020

#### GRADUATE COURSE PROJECTS

<b>Perception and Learning for Robotics(5.5/6.0)</b> <i>Topic: Crowd Navigation with LiDAR via Reinforcement Learning</i> • Trained End-to-end model by teacher-student policies in Orbit(built on Isaac Sim)	Spring 2024 <i>ETH Zürich</i>
<b>Decision Making for Autonomous Aerospace Systems(A+)</b> <i>Topic: Fault Tolerant Control of Quadrotor</i> • Designed Controller via Feedback Linearization, Sliding Mode and Backstepping	Spring 2023 <i>Seoul National University</i>
<b>Sensor-Based Spatial Intelligence(A0)</b> <i>Topic: Analysis of LiDAR SLAM in long-term localization</i> • Compared LiDAR SLAM in urban dataset for long term localization	Fall 2023 <i>Seoul National University</i>

#### TEACHING EXPERIENCE

<b>Teaching Assistant</b> • Basic of Robot Programming and Mechanical System Design	Spring 2023
<b>Teaching Tutor</b> • Engineering Mathematics I • Dynamics	Fall 2023

#### PATENT

<b>Parking Location Tracking System</b> , KR102291377B1 • <u>H. Kim</u> , T. Kim, J. Na, J. Lee, S. Jeong	2021
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#### EXTRA CURRICULAR

<b>CH-47 Helicopter Flight Attendant</b> , Republic of Korea Army • Put on the forest fire extinguish mission during the military service	Aug. 2021 – Feb. 2023
<b>Bulnabi</b> , Autonomous Flight Drone Club • Path planning via bezier curve, auto landing in simulation and real flight	2023
<b>SNU ZERO</b> , Autonomous Driving Car Club • Perform EKF localization and dynamic obstacle detection with LiDAR	2021
<b>STEM</b> , Honor Society of Seoul National University, College of Engineering • Launch academic talks : LiDAR vs Radar in perception field / Start-up business model building	2023
<b>Science Volunteer Corps</b> , Seoul National University	2019

#### SKILLS

<b>Programming:</b> C/C++, Python, Vanilla JS	<b>Manufactures:</b> SolidWorks, 3D printer(Stratasys), Laser cutter
<b>Frameworks:</b> ROS1/2, Isaac Sim, Gazebo, Pytorch	<b>Tools:</b> PX4-Autopilot, LS-DYNA, Matlab, Docker, QGIS