

# Hajun Kim

Email: hajun0219@kaist.ac.kr

Phone: (+82) 10-9912-1738

GitHub: <https://github.com/Hajun0219>

## Research Interests

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Legged Robots, State Estimation, System Identification, SLAM, Control, Machine Learning

## EDUCATION

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**Korea Advanced Institute of Science and Technology (KAIST)** | Daejeon, Korea

**Mar. 2022 –**

- **Ph.D. Candidate**, Mechanical Engineering
  - Research Area: State Estimation, Control, Machine Learning
  - Advisor: Hae-Won Park, Ph.D

**Korea Advanced Institute of Science and Technology (KAIST)** | Daejeon, Korea

**Mar. 2020– Feb. 2022**

- **M.S.**, Mechanical Engineering
  - Thesis: Control of the wheel-legged robot with mecanum wheels
  - using the nonlinear model predictive control
  - Advisor: Hae-Won Park, Ph.D

**Yonsei University** | Seoul, Korea

**Mar. 2014– Feb. 2020**

- **B.S.**, Mechanical Engineering
- Ranked 1st upon graduation

## Professional Experience

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**DYNAMIC ROBOT CONTROL AND DESIGN LABORATORY**

**Research Assistant (Advisor: Hae-Won Park)**

**Daejeon, Korea | Mar. 2020 –**

- Design of state estimation for legged robot systems.
- Design of learning-based control and motion planning algorithm for legged robot systems.
- Development of software architecture for legged robot systems.

## MILITARY SERVICE

**Suwon, Korea | July. 2015– July. 2017**

## Publication

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1. **Hajun Kim**, Dongyun Kang, Min-Gyu Kim, Gijeong Kim, and Hae-Won Park. "Online Friction Coefficient Identification for Legged Robots on Slippery Terrain Using Smoothed Contact Gradients." IEEE Robotics and Automation Letters (2025).
2. Ylenia Nistico(\*), **Hajun Kim(\*)**, Joao Carlos Virgolino Soares, Geoff Fink, Hae-Won Park, Claudio Semini, "Multi-Sensor Fusion for Quadruped Robot State Estimation using Invariant Filtering and Smoothing", Under Review RA-L. (\* Equal Contribution)

## Awards

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- **Top Graduate, B.Sc. in Mechanical Engineering, Yonsei University, 2020**

## Technical Skills

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- Language – Korean, English
- Programming – C, C++, ROS, Python, MATLAB
- Technical Background
  - Experience in the development process of legged robot systems from hardware to real-time software.
  - Development of state estimation for legged robot systems
  - Development of software for legged robot systems
  - Development of control algorithm for legged robot systems from simulation to real-world deployment.
  - Experience with various legged robot platforms (e.g., MIT Mini Cheetah, Unitree Go1, KAIST Hound, and KAIST Hound2)