Dohyeon Lee

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EDUCATION

Pohang University of Science and Technology – POSTECH *Pohang, South Korea*
BS in Convergence IT Engineering Mar 2020 – Current
GPA:3.78/4.3, Major:3.93/4.3

PUBLICATIONS

A highly maneuverable flying squirrel drone with agility-improving foldable wings
D. Lee*, J. Kang*, S. Han
IEEE Robotics and Automation Letters (**RA-L**), 2025 Page: clink

A Highly Maneuverable Flying Squirrel Drone with Controllable Foldable Wings
J. Kang*, **D. Lee***, S. Han
IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2023 Page: clink

RESEARCH EXPERIENCES

Computational Control Engineering Lab (CoCEL), POSTECH *Pohang, South Korea*
U.G. Researcher Feb. 2022 - Feb. 2024
Supervisor: Prof. Soohee Han

Project : Development of flying squirrel drone

- Development of flying squirrel drone hardware and stabilization of low-level control system.
- Implement Kalman filter based state estimation for the developed embedded hardware.
- Implement integral backtepping based Lyapunov stable controller for drone.
- Collect data using Mocap and GPS for training neural net dynamics model.
- Implement simulation for full SE(3) dynamics model using MATLAB using ode45 integrator.

Dynamic Robot Control and Design Lab (DRCD), KAIST *Daejoon, South Korea*
U.G. Researcher Jun. 2023 - Sep. 2023
Supervisor: Prof. Hae-won Park

Project : Whole-body control of quadrupedal robot with arm by off-policy RL

- implement off-policy (SAC) and on-policy (PPO) RL to a Legged-manipulator robot in the Isaac Gym.
- Designed a learning pipeline for whole-body control of a legged-manipulator robot using a VAE and the replay buffer of an off-policy reinforcement learning algorithm.

PERSONAL PROJECTS

Sloshing control with Physics-Informed RNN by 6-axis manipulator Aug. 2023 - Feb. 2024
Related achievement: *1^{st} place* in 2023 Undergraduate Group Research Program(UGRP), POSTECH

- Development of 6-axis manipulator hardware and stabilization of low-level control system.
- Proposal and Implementation of a Physics-Informed RNN for water state observer.
- Implement LQR controller and velocity motion planning of manipulator for water sloshing control.

Quadruped-wheel robot control with impedance control Jun. 2021 - Feb. 2022
Related achievement: *1^{st} place* in 2021 Undergraduate Group Research Program(UGRP), POSTECH

- Development of quadruped-wheel robot hardware and stabilization of low-level control system.
- Application of impedance control to the robot legs.

AWARDS AND SCHOLARSHIPS

***2nd place* in 2024 Military AI Contest**, Ministry of National Defense 2024
Chief of Naval Operations Award
5K USD

***1st place* in 2023 Undergraduate Group Research Program(UGRP)**, POSTECH 2023
Subject: Sloshing control with Physics-Informed RNN by 6-axis manipulator
2.1K USD

***1st place* in 2022 Undergraduate Group Research Program(UGRP)**, POSTECH 2022
Subject: Flying Squirrel Biomimetic Drone
2.1K USD

***1st place* in 2021 Undergraduate Group Research Program(UGRP)**, POSTECH 2021
Subject: Quadruped-wheel robot control with impedance control
2.1K USD

Creative IT Engineering Scholarship, Korea Government 2020
8.3K USD

SKILLS

C++, C, Python, MATLAB

Isaac gym, Issac sim, ROS1, ROS2, Pytorch, Git

OTHER ACTIVITIES

Military Service, Korean Army Jul. 2024 - Current
Scheduled to complete military service as Army sergeant in December 2025

President of Robot Central Club, POSTECH Jun. 2022 - Jun. 2023