Dohyeok Lee

✉: dohyeoklee@snu.ac.kr | 🌐 : dohyeoklee.github.io | ⬡ : github.com/dohyeoklee

Research Interests

I am currently interested in empowering and revealing the secrets of generalization in robotic agents, towards developing foundation models for robotic manipulation that can generalize across time, space, and embodiments. My research focuses on physical understanding of robotic systems and building theoretical foundations for robot learning to enable robust real-world deployment.

Education

Seoul National University(SNU), Ph.D. in ECE	Sep 2024 – *present*
Seoul National University(SNU), M.S. in ECE	Mar 2022 – Feb 2024
Korea Advanced Institute of Science and Technology(KAIST), B.S. in EE	Mar 2016 – Feb 2020

Publications & Conferences   C=Conference, D=Demo, S=In Submission, W=Workshop

[W2] Dynamics-Aligned Flow Matching Policy for Robot Learning	CVPR EAI Workshop 2025
Dohyeok Lee, Jung Min Lee, Munkyung Kim ,Seokhun Ju, Seungyub Han, Jin Woo Koo, Jungwoo Lee	
[W1] View-Imagination: Enhancing Visuomotor Control with Adaptive View Synthesis	CVPR EAI Workshop 2025
Dohyeok Lee, Munkyung Kim, Jung Min Lee, Seungyub Han, Jungwoo Lee	
[C2] SPQR: Controlling Q-ensemble Independence with Spiked Random Model for Reinforcement Learning	NeurIPS 2023
Dohyeok Lee, Seungyub Han, Taehyun Cho, Jungwoo Lee	
[D1] ARTificial Expressions: Human-Robot Interactive Drawing *(Best Demo)*	CVPR Demo 2023
Yejin Kim, *Dohyeok Lee*	
[C1] Control of Furuta Pendulum with Reinforcement Learning	ICCAS 2019
Dohyeok Lee, Usama Mohammad, Dong Eui Chang	

Work Experience

Robotics Engineer, D.Hive (start-up)	Oct 2020 – April 2021

- Developed autonomous delivery robot with integrated sensor fusion and control systems
- Led cross-functional team of 10 engineers for full-stack development from hardware to perception modules, achieving successful outdoor autonomous navigation

Robotics Engineer Intern, Crazing Lab. (start-up)	June 2019 – Aug 2019

- Developed mobile robot platform with BLDC motor control and UART communication systems
- Implemented ROS system for motor control, IMU, LiDAR, and depth camera data processing

Open Source Projects

Nonlinear controller (★ 20)   ⬡

- Implemented nonlinear control (robust, adaptive, sliding mode) algorithms on two-arm manipulator simulator

EKF (★ 14)   ⬡

- Implemented EKF(Extended Kalman Filter) for sensor fusion of GPS and IMU data with Kitti dataset

IMPALA   ⬡

- Implemented IMPALA (distributed RL architecture) using ray, redis, and UDP

RRT   ⬡

- Implemented RRT(Rapid Random Tree) algorithms

Robotics Projects

Mobile Humanoid   2024
- Developed wheel-based humanoid for navigation and object manipulation

Robot-AR system   2021
- Developed AR system integrating robot Spot with Unity, ROS

Vender   2020
- Created A.I media artwork with A.I based emotion recognition and autonomous vending machine system

Autonomous Mobile Robot   2018
- Developed autonomous mobile robot with YOLO, Tmap API, GPS and compass sensor, etc.