

# Dohyeok Lee

✉: [dohyeoklee@cml.snu.ac.kr](mailto:dohyeoklee@cml.snu.ac.kr) | 🌐: [dohyeoklee.github.io](https://dohyeoklee.github.io) | 🏙: [github.com/dohyeoklee](https://github.com/dohyeoklee)

## Research Interests

My research focuses on empowering robots with physical understanding to achieve robust generalization across diverse robotic task scenarios. My approach leverages spatiotemporal dynamics, combining novel view synthesis and dynamics prediction to enable robots to adapt to novel scenarios beyond their training distribution.

## Education

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

## Work Experience

<b>Visiting Ph.D. Student</b> , <a href="#">EmPRISE Lab</a> @ Cornell University	Jan 2026 – present
<b>Robotics Engineer</b> , D.Hive (startup)	Oct 2020 – April 2021
<b>Robotics Engineer Intern</b> , Crazing Lab. (startup)	June 2019 – Aug 2019

## Publications & Conferences

C=Conference, D=Demo, W=Workshop

<b>[C3] Pareto Optimal Risk-Agnostic Distributional Bandits with Heavy-Tail Rewards</b>	<a href="#">NeurIPS 2025</a>
Kyungjae Lee, Dohyeong Kim, Taehyun Cho, Chaeyeon Kim, Yunkyoung Ko, Seungyub Han, Seokhun Ju, <i>Dohyeok Lee</i> , Sungbin Lim	
<b>[C2] SPQR: Controlling Q-ensemble Independence with Spiked Random Model for Reinforcement Learning</b>	<a href="#">NeurIPS 2023</a>
<i>Dohyeok Lee</i> , Seungyub Han, Taehyun Cho, Jungwoo Lee	
<b>[C1] Control of Furuta Pendulum with Reinforcement Learning</b>	<a href="#">ICCAS 2019</a>
<i>Dohyeok Lee</i> , Usama Mohammad, Dong Eui Chang	
<b>[D1] ARTificial Expressions: Human-Robot Interactive Drawing (<i>Best Demo</i>)</b>	<a href="#">CVPR Demo 2023</a>
<i>Yejin Kim, Dohyeok Lee</i>	
<b>[W4] Hide and Seek: Looking and Loving</b>	<a href="#">Humanoids ECoCreate 2025</a>
<i>Min young Kim, Jejin Kim, Dohyeok Lee</i>	
<b>[W3] Viewpoint-Invariant Latent Action Learning from Human Video Demonstrations</b>	<a href="#">NeurIPS SpaVLE 2025</a>
<i>Jung Min Lee, Dohyeok Lee, Jungwoo Lee</i>	
<b>[W2] Learning Generalizable Visuomotor Policy through Dynamics-Alignment</b>	<a href="#">CVPR EAI 2025</a>
<i>Dohyeok Lee, Jung Min Lee, Munkyoung Kim, Seokhun Ju, Jin Woo Koo, Kyungjae Lee, Dohyeong Kim, TaeHyun Cho, Jungwoo Lee</i>	
<b>[W1] View-Imagination: Enhancing Visuomotor Control with Adaptive View Synthesis</b>	<a href="#">CVPR EAI 2025</a>
<i>Dohyeok Lee, Munkyoung Kim, Jung Min Lee, Seungyub Han, Jungwoo Lee</i>	

## Open Source Projects

<b>Nonlinear controller</b> (★ 20)	
• Implemented nonlinear control algorithms (robust, adaptive, sliding mode control) on two-arm manipulator simulator	
<b>EKF</b> (★ 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

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### Mobile Humanoid

2024

- Developed wheel-based humanoid for navigation and object manipulation

### Vender

2020

- Created AI media artwork with AI 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.

### Hand-shape Manipulator

2017

- Developed hand-shape manipulator and glove-shape interface for teleoperation