Seungeun(Ross) Rho

Website, Google Scholar

RESEARCH INTERESTS

Deep Reinforcement Learning, Robot Learning, Skill Discovery and Imitation Learning

EDUCATION

Georgia Institute of Technology 2023 -

- Ph.D. student in Computer Science, advised by Prof. Sehoon Ha
- Collaborated closely with Prof. Xue Bin Peng and Prof. Danfei Xu

Seoul National University

- M.S. in Machine Learning 2017
- B.S. in Computer Science 2015

INDUSTRY

Robotics and AI Institute (Boston Dynamics AI Institute), Cambridge, USA 2025
Research Scientist Intern

Kakao Brain, South Korea 2021 - 2023
ML Researcher

NCSOFT, Game AI Lab, South Korea 2018 - 2020
ML Researcher

PUBLICATIONS

*: co-first author

[1] **LineRides: Line-Guided Reinforcement Learning for Bicycle Robot Stunts**
Rho, S., Fahmi, S., Kim, J., Ilvonen, A., Ha, S., Nelson G. *Under Review at RA-L*, 2026.

[2] **Reference Grounded Skill Discovery**
Rho, S., Trinh, A., Xu, D., Ha, S. *International Conference on Learning Representation*, 2026.

[3] **Flip Stunts on Bike-Like Robots using Iterative Motion Imitation**
Kim, J., Fahmi, S., Rho, S., Ha, S., Nelson, G. *International Conference on Robotics and Automation,* 2026.

[4] **Language Guided Skill Discovery**
Rho, S., Smith, L., Li, T., Levin, S., Peng, XB., Ha, S. *International Conference on Learning Representation*, 2025.

[5] **Unsupervised Skill Discovery as Exploration for Learning Agile Locomotion**
Rho, S.*, Garg, K.*, Byrd, M., Ha, S. *Conference on Robot Learning*, 2025.

[6] **Wing Strain-based Flight Control of Flapping-Wing Drones through Reinforcement Learning**
Kim, T.*, Hong, I.*, Im. S.*, Rho, S.* *et al*. *Nature Machine Intelligence*, 2024.

[7] **Efficient Latent Variable Modeling for Knowledge-Grounded Dialogue Generation**
Han, G., Jo D., Nam, D.W., Yoon, E., Kwon, T., Rho, S., On, K., Yoo, C.D., Kim, S. *EMNLP Findings*, 2023.

[8] **LECO: Learnable Episodic Count for Task-Specific Intrinsic Reward**
Jo, D., Kim, S., Nam, D.W., Kwon, T., Rho, S., Kim, J., Lee, D. *NeurIPS*, 2022.

[9] **Creating Pro-level AI for a Real-Time Fighting Game Using Deep Reinforcement Learning**
Oh, I.*, Rho, S.*, *et al*. *IEEE Transactions on Games-Outstanding Paper Award*, 2021.

PROJECTS

RL Competition Honors 2020 - 2022

- **1st Place Winner** - NeurIPS'22, IGLU Challenge RL Track
  - Won both 1st place and the Research Prize among 22 teams.
  - The task involves training agents to follow natural language instructions and build a target structure. - link
- **Gold Medal Winner -** Google Research & Manchester F.C., Football AI Competition
  - Ranked at 6th / 1,138 (top 0.5%).
  - Approach description and code for our fictitious self-play RL method

Open Source Contributions

- **MinimalRL** (★3.2K+) 2019 - 2023
  - Minimal implementations of core deep RL algorithms - link
  - Including PPO, SAC, DQN, ACER, A2C, A3C, V-Trace, …
- **BrainAgent** (★90+) 2022
  - A distributed learning system for large-scale RL on 100+ GPUs - link
  - One of the first publicly available implementations to reproduce SOTA results on DMLAB30.

Book Publication 2020

- Published a Korean book titled "*Learning Reinforcement Learning from the Basics*"
- The book introduces the basic concepts of RL and its applications to games.

Scholarly Activities

Reviewer Service 2024 - 2026

- ICRA, TMLR - 2026
- NeurIPS, ICLR - 2025
- NeurIPS - 2024