

# Daesol Cho

MACHINE LEARNING, ROBOTICS RESEARCHER

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## Education

### SNU (Seoul National University)

PH.D. IN MECHANICAL & AEROSPACE ENGINEERING

Seoul, Korea

September, 2021 - Present

- Research topics: “Deep Reinforcement Learning, Robotics, Generative Model, Machine Learning.”

### SNU (Seoul National University)

M.S. IN MECHANICAL & AEROSPACE ENGINEERING

Seoul, Korea

September, 2019 - Aug. 2021

- Thesis topic: “Dual-arm Manipulation Using Hierarchical Reinforcement Learning.”

### SNU (Seoul National University)

B.S. IN MECHANICAL & AEROSPACE ENGINEERING

Seoul, Korea

Mar. 2013 - Aug. 2019

- Thesis topic: “Dynamic Obstacle Removal in ORB-SLAM2 via CNN-based Object Detection.”

## Publication

\* indicates equal contribution.

**Daesol Cho**, Jigang Kim and H. Jin. Kim. (2024). Boosting Autonomous Reinforcement Learning via Action-Free Video and Plasticity Preservation, Robotics: Science and Systems (RSS) workshop.

**Daesol Cho**, Seungjae Lee and H. Jin. Kim. (2023). Diversify & Conquer: Outcome-directed Curriculum RL via Out-of-Distribution Disagreement, Neural Information Processing Systems (NeurIPS).

Seungjae Lee, **Daesol Cho**, Jonghae Park and H. Jin. Kim. (2023). CQM: Curriculum Reinforcement Learning with a Quantized World Model, Neural Information Processing Systems (NeurIPS).

Jigang Kim\*, **Daesol Cho**\* and H. Jin. Kim. (2023). Demonstration-free Autonomous Reinforcement Learning via Implicit and Bidirectional Curriculum, International Conference on Machine Learning (ICML), IROS 2023 workshop

Seungjae Lee, Jongho Shin, Hyeong-Geun Kim, **Daesol Cho** and H. Jin. Kim. (2023). Deep End-to-end Imitation Learning for Missile Guidance With Infrared Images, International Journal of Control, Automation and Systems (IJCAS).

**Daesol Cho**\*, Seungjae Lee\* and H. Jin. Kim. (2023). [Spotlight] Outcome-Directed Reinforcement Learning by Uncertainty & Temporal Distance-Aware Curriculum Goal Generation, International Conference on Learning Representations (ICLR).

**Daesol Cho**\*, Dongseok Shim\* and H. Jin. Kim. (2022). S2P: State-conditioned Image Synthesis for Data Augmentation in Offline Reinforcement Learning”, Neural Information Processing Systems (NeurIPS).

Jigang Kim, J. hyeon Park, **Daesol Cho** and H. Jin. Kim. (2022). [presented in ICRA 2023] Automating Reinforcement Learning With Example-Based Resets, IEEE Robotics and Automation Letters (RA-L).

**Daesol Cho**, Jigang Kim and H. Jin. Kim. (2022). [presented in IROS 2022] Unsupervised Reinforcement Learning for Transferable Manipulation Skill Discovery, IEEE Robotics and Automation Letters (RA-L).

## Honors & Awards & Scholarships

2023	Youlchon AI Young Researcher Fellowship
2022-2023	Brain Korea 21 Plus (BK21+) Ph.D Fellowship Scholarship
2022	Lecture & Research Scholarship
2019	Summa Cum Laude, Seoul National University
2017-2018	National Scholarship for Science and Engineering
2017-2018	System Technology Excellence Foundation (STX Foundation) Domestic Scholarship
2013-2014	National Scholarship for Academic Excellence

## Experience

## Deepest, SNU deep learning society

RESEARCH GROUP PROJECT LEADER, RESEARCHER

- Conduct an offline RL project.
- Attend Kaggle on Kore 2022 challenges (Top 11% in competition).

Seoul, Korea

September. 2021 - August. 2022

## Projects

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### Transfer of Driving Dynamics Parameter between Car Models

PROJECT LEADER

Hyundai Motor Company

Seoul, Korea

April. 2022 - Present

### Transfer Learning for Multi-agent Systems

RESEARCHER

Agency for Defense Development

Seoul, Korea

October. 2019 - October. 2021

### BabyMind: Infant-Mimic Developmental Machine Learning

RESEARCHER

Korea Ministry of Science and ICT

Seoul, Korea

April. 2019 - December. 2020

### RL Application of an A/C Unit via Domain Randomization

RESEARCHER

LG Electronics

Seoul, Korea

August. 2019 - November. 2020

## Academic Activities

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2023-2024	Reviewer (NeurIPS, ICML, ICRA, IROS).
2023	Hyundai Motors and LG Group AI Boosting Camp (AIBC) Reinforcement Learning Instructor.
2020-2021	Teaching Assistant at Seoul National University (Aerospace Engineering Experiment).
2019	Teaching Assistant at Seoul National University (Introductory Engineering Probability).
2019	Tutor at Seoul National University (Basic Calculus).

## Skills

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<b>Programming</b>	Python, PyTorch, Tensorflow, Matlab, C/C++, LaTeX
<b>Languages</b>	Korean, English