Daesol Cho

Machine Learning, Robotics Researcher

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Education

SNU (Seoul National University) — *Seoul, Korea*

Ph.D. in Mechanical & Aerospace Engineering — *September. 2021 - Present*

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

SNU (Seoul National University) — *Seoul, Korea*

M.S. in Mechanical & Aerospace Engineering — *September. 2019 - Aug. 2021*

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

SNU (Seoul National University) — *Seoul, Korea*

B.S. in Mechanical & Aerospace Engineering — *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).

Projects

Transfer of Driving Dynamics Parameter between Car Models — *Seoul, Korea*

Project Leader — *April. 2022 - Present*

Hyundai Motor Company

Transfer Learning for Multi-agent Systems — *Seoul, Korea*

Researcher — *October. 2019 - October. 2021*

Agency for Defense Development

BabyMind: Infant-Mimic Developmental Machine Learning — *Seoul, Korea*

Researcher — *April. 2019 - December. 2020*

Korea Ministry of Science and ICT

RL Application of an A/C Unit via Domain Randomization *Seoul, Korea*

Researcher *August. 2019 - November. 2020*

LG Electronics

Experience

Deepest, SNU deep learning society *Seoul, Korea*

Research Group Project Leader, Researcher *September. 2021 - August. 2022*

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

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

Academic Activities

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

Programming Python, PyTorch, Tensorflow, Matlab, C/C++, LaTeX

Languages Korean, English