Seungjae Lee

Third-year Ph.D. student at Seoul National University

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Personal Profile

I am a third-year Ph.D. student advised by Prof. H. Jin Kim @ LARR (Lab for Autonomous Robotics Research) at Seoul National University. My research goals are to understand the interaction between reinforcement learning agents and environments, and devise reinforcement learning algorithms with higher data efficiency. To achieve my goals, I am studying and researching to improve the exploration performance of reinforcement learning agents, and to propose better representation learning methods.

Education

Seoul National University *Seoul, Korea*

M.S. Ph.D. integrated, Mechanical and Aerospace Engineering *2021.03 - now*

- Explorations for Reinforcement Learning
- Representation Learning for Reinforcement Learning

Seoul National University *Seoul, Korea*

B.S., Mechanical and Aerospace Engineering *2015.02 - 2021.02*

- **Courses:** Autonomous Robot Intelligence, Data Structures, Machine Learning Fundamentals and Applications, Algorithms, Statistics, Dynamics, Solid Mechanics.

Publications

First Author * Equal Contribution

Outcome-directed Reinforcement Learning by Uncertainty & Temporal Distance-Aware Curriculum Goal Generation
Daesol Cho*, Seungjae Lee*, H Jin Kim
Eleventh International Conference on Learning Representations, 2023, ***(ICLR)***, ***Spotlight***

DHRL: A Graph-Based Approach for Long-Horizon and Sparse Hierarchical Reinforcement Learning
Seungjae Lee, Jigang Kim, Inkyu Jang, H Jin Kim
Thirty-sixth Conference on Neural Information Processing Systems, 2022, ***(NeurIPS)***, ***Oral - top 1.76%***

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

SNeRL: Semantic-aware Neural Radiance Fields for Reinforcement Learning
Dongseok Shim*, Seungjae Lee*, H Jin Kim Kim
Fortieth International Conference on Machine Learning, 2023, ***(ICML)***

Co-Author

Robust and Recursively Feasible Real-Time Trajectory Planning in Unknown Environments
Inkyu Jang, Dongjae Lee, Seungjae Lee, H Jin Kim
2021 IEEE/RSJ International Conference on Intelligent Robots and Systems, 2021, ***(IROS)***

Work Experience

- [Internship] Samsung Electronics, Department of Deep Learning Algorithm / Device Solutions, 2020.7 - 2020.9
- [Research Group] Deepest. (SNU Deep Learning Society), 2020.9 - now

Academic Services

- Conference reviewer for International Conference on Machine Learning (ICML)

Awards and Achievements

- [Scholarship] Hyundai Motor Chung Mong-Koo Foundation, 2021.9 - Now
- [Awards] NeurIPS Scholar Award, 2022
- [Awards] Graduated Summa Cum Laude at SNU (1st prize in Department of Aerospace Engineering)
- [Awards] Best poster competition 1st prize @ SNU Artificial Intelligence Institute Spring Retreat 2023
- [Conference] Oral presentation @ NeurIPS 2022
- [Conference] Spotlight @ ICLR 2023