

SEUNGYONG MOON

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RESEARCH STATEMENT

My research is centered on developing autonomous agents that can robustly perceive, act, and reason in adversarial and out-of-distribution scenarios.

EDUCATION

Seoul National University

Mar. 2019 -

Ph.D. in Computer Science

Advisor: Hyun Oh Song

Relevant Coursework: Advanced Theory in Computation (4190.561), Probabilistic Graphical Models (M1522.001300), Neural Networks (M3309.002300)

Seoul National University

Mar. 2011 - Feb. 2019

B.S. in Mathematics, B.A. in Economics, Minor in Computer Science

Honors: Summa Cum Laude

Relevant Coursework: Linear Algebra (300.203A), Real Analysis (881.425), Algorithms (4190.407), Introduction to Deep Learning (M2177.004300), Advanced Artificial Intelligence (4190.569)

Leave of absence to fulfill mandatory military service (2013 - 2015)

PUBLICATIONS

Discovering Hierarchical Achievements in Reinforcement Learning via Contrastive Learning

Seungyong Moon, Junyoung Yeom, Bumsoo Park, Hyun Oh Song

Neural Information Processing Systems (NeurIPS), 2023

Rethinking Value Function Learning for Generalization in Reinforcement Learning

Seungyong Moon, JunYeong Lee, Hyun Oh Song

Neural Information Processing Systems (NeurIPS), 2022

Query-Efficient and Scalable Black-Box Adversarial Attacks on Discrete Sequential Data via Bayesian Optimization

Deokjae Lee, **Seungyong Moon**, Junhyeok Lee, Hyun Oh Song

International Conference on Machine Learning (ICML), 2022

Preemptive Image Robustification for Protecting Users against Man-in-the-Middle Adversarial Attacks

Seungyong Moon^{*}, Gaon An^{*}, Hyun Oh Song

AAAI Conference on Artificial Intelligence (AAAI), 2022

Uncertainty-Based Offline Reinforcement Learning with Diversified Q-Ensemble

Gaon An^{*}, **Seungyong Moon**^{*}, Jang-Hyun Kim, Hyun Oh Song

Neural Information Processing Systems (NeurIPS), 2021

Parsimonious Black-Box Adversarial Attacks via Efficient Combinatorial Optimization

Seungyong Moon^{*}, Gaon An^{*}, Hyun Oh Song

International Conference on Machine Learning (ICML), 2019

Selected as a long talk (159/3424=4.64%)

AWARDS AND SCHOLARSHIPS

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| NeurIPS Scholar Award | 2023 |
| NAVER Ph.D. Fellowship Award | 2022 |
| NeurIPS Top Reviewers | 2022 |
| Yulchon AI Star Scholarship | 2022 |
| Qualcomm Innovation Fellowship Finalists | 2020, 2022 |
| KFAS Computer Science Graduate Student Scholarship | 2019 - 2024 |
| The National Scholarship for Science and Engineering | 2015 - 2016 |
| Gwanak Association Scholarship | 2012 |

WORK EXPERIENCE

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|---|-----------------------|
| Research Intern KRAFTON, Seoul, South Korea Worked on reinforcement learning for gaming environments | Jun. 2023 - Sep. 2023 |
| Research Intern DeepMetrics, Seoul, South Korea Worked on reinforcement learning for ventilator control | Jun. 2022 - Sep. 2022 |
| Research Intern NAVER Search & Clova, Seongnam-si, South Korea Worked on data augmentation for paraphrase identification | Jul. 2017 - Aug. 2017 |

TEACHING EXPERIENCE

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|---|----------------------|
| Teaching Assistant Machine Learning (4190.666) | Fall 2020, Fall 2022 |
| Teaching Assistant Introduction to Deep Learning (M2177.0043) | Spring 2019 |
| Undergraduate Student Instructor Basic Calculus 2 (033.017) | Fall 2017 |
| Undergraduate Student Instructor Basic Calculus 1 (033.016) | Spring 2017 |

ACADEMIC SERVICES

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| Conference Reviewer ICML (2022, 2023, 2024), NeurIPS (2021, 2022, 2023), ICLR (2024), RLC (2024), AAAI (2022, 2023, 2024) |
| Journal Reviewer Neurocomputing (2021), Machine Learning (2023), Transactions on Intelligent Vehicles (2023) |

SKILLS

Programming Languages and Frameworks

- Advanced: Python, PyTorch, TensorFlow, JAX, LaTeX
- Intermediate: C++, MATLAB

Languages

- Korean (native)
- English (fluent)