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Seungyong Moon

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Research Statement

My research goal is to develop autonomous agents that are capable of robust perception, action, and reasoning in adversarial and out-of-distribution scenarios.

Education

Seoul National University Mar 2019–Feb 2026
PhD in Computer Science (expected)

- Advisor: Hyun Oh Song

Seoul National University Mar 2011–Feb 2019
BS in Mathematical Science, BA in Economics, Minor in Computer Science

- Honers: Summa Cum Laude
- Leave of absence to fulfill mandatory military service (2013–2015)

Work Experience

Research Intern Amsterdam, Netherlands
Qualcomm Sept 2024–Jan 2025

- Working on improving searching with language models using reinforcement learning in code generation

Research Intern Seoul, South Korea
KRAFTON June 2023–Sept 2023

- Worked on developing GPT-4 based agents in gaming environments

Research Intern Seoul, South Korea
DeepMetrics June 2022–Sept 2022

- Worked on developing reinforcement learning algorithms for ventilator control

Research Intern Seongnam-si, South Korea
NAVER Corp. June 2018–Aug 2018

- Worked on developing data augmentation algorithms for improving paraphrase identification

Preprints

Guided Stream of Search: Learning to Better Search with Language Models via Optimal Path Guidance arXiv
Seungyong Moon, Bumsoo Park, Hyun Oh Song

Publications

Discovering Hierarchical Achievements in Reinforcement Learning via Contrastive Learning NeurIPS 2023
Seungyong Moon, Junyoung Yeom, Bumsoo Park, Hyun Oh Song

Rethinking Value Function Learning for Generalization in Reinforcement Learning NeurIPS 2022
Seungyong Moon, JunYeong Lee, Hyun Oh Song

Query-Efficient and Scalable Black-Box Adversarial Attacks on Discrete Sequential Data via Bayesian Optimization ICML 2022
Deokjae Lee, Seungyong Moon, Junhyeok Lee, Hyun Oh Song

Preemptive Image Robustification for Protecting Users against Man-in -the-Middle Adversarial Attacks AAAI 2022

Seungyong Moon*, Gaon An*, Hyun Oh Song

Uncertainty-Based Offline Reinforcement Learning with Diversified Q-Ensemble NeurIPS 2021

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

Parsimonious Black-Box Adversarial Attacks via Efficient Combinatorial Optimization ICML 2019

Seungyong Moon*, Gaon An*, Hyun Oh Song

Awards and Scholarships

NeurIPS Scholar Award 2023

NAVER PhD 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

Teaching Experience

Teaching Assistant Fall 2020, Fall 2022
Machine Learning

Teaching Assistant Spring 2019
Introduction to Deep Learning

Undergraduate Student Instructor Fall 2017
Basic Calculus 2

Undergraduate Student Instructor Spring 2017
Basic Calculus 1

Academic Services

Conference Reviewer
NeurIPS (2021-2024), ICML (2022-2024), AAAI (2022-2024), ICLR (2024-2025), RLC (2024), AISTATS (2025)

Journal Reviewer
Neurocomputing (2021), Machine Learning (2023), Transactions on Intelligent Vehicles (2023)

Skills

Programming Languages

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

Languages

- Korean (native)
- English (fluent)