

SEUNGYUB HAN

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EDUCATION

SEOUL NATIONAL UNIVERSITY

Ph. D. student *Electical and Computer Engineering*

2016 - current

Seoul, Korea

Advisor: Prof. Jungwoo Lee

Partial leave of absence to working at Hodoo AI: 2019 - 2022 (4 years)

SEOUL NATIONAL UNIVERSITY

B.S. *Electical and Computer Engineering*

2016

Seoul, Korea

Leave of absence for military service: Feb. 2012 - Feb. 2014 (2 years)

RESEARCH INTEREST

Reinforcement Learning, Robot Learning, Continual Learning, Non-convex Optimization

WORK EXPERIENCE

HODOO AI

Research Engineer (a spin-off startup founded by my advisor, Jungwoo Lee)

2019 - 2022

Seoul, Korea

WANDERLUST INC.

Research Intern

2016

Seoul, Korea

PUBLICATIONS

CONFERENCE | (*: equal contribution)

- [1] Doheyoung Kim, Taehyun Cho, **Seungyub Han**, Hojun Chung, Kyungjae Lee, and Songhwa Oh. "Spectral-Risk Safe Reinforcement Learning with Convergence Guarantees". **The Thirty-eighth Annual Conference on Neural Information Processing Systems**. 2024.
- [2] Taehyun Cho, **Seungyub Han**, Heesoo Lee, Kyungjae Lee, and Jungwoo Lee. "Pitfall of Optimism: Distributional Reinforcement Learning by Randomizing Risk Criterion". **Advances in Neural Information Processing Systems (NeurIPS)**. 2023.
- [3] Dohyeok Lee, **Seungyub Han**, Taehyun Cho, and Jungwoo Lee. "SPQR: Controlling Q-ensemble Independence with Spiked Random Model for Reinforcement Learning". **Advances in Neural Information Processing Systems (NeurIPS)**. 2023.
- [4] **Seungyub Han**, Yeongmo Kim, Taehyun Cho, and Jungwoo Lee. "On the Convergence of Continual Learning with Adaptive Methods". **Proceedings of the Thirty-Ninth Conference on Uncertainty in Artificial Intelligence (UAI)**. 2023.
- [5] Taehyun Cho, **Seungyub Han**, Heesoo Lee, Kyungjae Lee, and Jungwoo Lee. "Perturbed Quantile Regression for Distributional Reinforcement Learning". **Deep Reinforcement Learning Workshop NeurIPS 2022**. 2022.
- [6] **Seungyub Han**, Yeongmo Kim, Taehyun Cho, and Jungwoo Lee. "Adaptive Methods for Nonconvex Continual Learning". **OPT 2022: Optimization for Machine Learning (NeurIPS 2022 Workshop)**. 2022.
- [7] **Seungyub Han**, Yeongmo Kim, Seokhyeon Ha, Jungwoo Lee, and Seunghong Choi. "Learning to Learn Unlearned Feature for Brain Tumor Segmentation". **Medical Imaging meets NeurIPS Workshop**. 2018.

JOURNAL | (*: equal contribution)

- [1] Jungeun Lee, **Seungyub Han**, and Jungwoo Lee. "D2NAS: Efficient Neural Architecture Search with Performance Improvement and Model Size Reduction for Diverse Tasks". **IEEE Access** (2024).

PREPRINT | (*: equal contribution)

- [1] Taehyun Cho, **Seungyub Han**, Kyungjae Lee, Seokhun Ju, Dohyeong Kim, and Jungwoo Lee. "Tractable and Provably Efficient Distributional Reinforcement Learning with General Value Function Approximation". **arXiv preprint arXiv:2407.21260** (2024).
- [2] Hyeungill Lee, **Seungyub Han**, and Jungwoo Lee. "Generative adversarial trainer: Defense to adversarial perturbations with GAN". **arXiv preprint arXiv:1705.03387** (2017).

PROJECTS

NATIONAL RESEARCH FOUNDATION OF KOREA | *Research of LLMs and RL for human-AI collaboration and interaction*

2024 -

- Research Assistant at SNU

HANHWA SYSTEMS <i>Research for role diversification of heterogeneous multi-agent systems</i>	2023 – 2024
• Research Assistant at SNU	
AGENCY FOR DEFENSE DEVELOPMENT <i>Center for Applied Research in Artificial Intelligence</i>	2022 – 2023
• Research Assistant at SNU	
NATIONAL RESEARCH FOUNDATION OF KOREA <i>Robot learning systems with learning by asking based on long-horizon RL</i>	2021 – 2023
• Research Assistant at SNU	
HODOO AI MEDICAL IMAGING <i>Continual learning framework for MR brain metastasis diagnostics</i>	2019 – 2021
• Research Engineer at Hodoo AI	
MINISTRY OF SCIENCE <i>Deep and reinforcement learning techniques for smart IoT networks</i>	2017 – 2018
• Research Assistant at SNU	
SEOUL NATIONAL UNIVERSITY <i>Development of precise imaging diagnosis technology based on artificial intelligence for brain tumor</i>	2017 – 2018
• Research Assistant at SNU	
AGENCY FOR DEFENSE DEVELOPMENT <i>Paralysis technique of digital communication under cyber electronic warfare</i>	2016 – 2018
• Research Assistant at SNU	
WANDERLUST INC. <i>Photo recommendation system by instance segmentation and matrix factorization</i>	2016
• Research Intern at Wanderlust Inc.	

INVITED TALKS

LEARNING TO LEARN UNLEARNED FEATURE FOR SEGMENTATION <i>NAVER</i>	May 2019
IMPLEMENTATION OF PHYSICAL LAYER COMMUNICATION SYSTEM BY DEEP LEARNING <i>Pusan National University</i>	Jan. 2019
IMPLEMENTATION OF PHYSICAL LAYER CHANNEL BY AUTOENCODER <i>Pusan National University</i>	Jan. 2019

GUEST LECTURES

INTRODUCTION TO REINFORCEMENT LEARNING <i>Samsung Electronics</i>	Nov 2019
DEEP LEARNING BASED FACE RECOGNITION SYSTEM <i>Samsung Electronics</i>	Feb. 2018

ACADEMIC ACTIVITIES

AI CONFERENCES	NeurIPS (2022 –), ICML (2023 –), ICLR (2024 –)
AI CONFERENCE WORKSHOP <i>NeurIPS Optimization for Machine Learning Workshop</i>	2024 –
CONFERENCES <i>IEEE International Conference on Communications (ICC)</i>	2019