

Hyunin Lee

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Education

University of California, Berkeley

CA, United States

Ph.D. in Mechanical Engineering / **Specialization: Reinforcement Learning**

Aug. 2022 –

Seoul National University

Seoul, Rep.of.Korea

B.S in Mechanical Engineering; *summa cum laude*

Mar. 2015 – Feb. 2022

Publications / C: CONFERENCE, J: JOURNAL, P: PREPRINT

[C5] Position: AI Safety Must Embrace an Antifragile Perspective.

M. Jin, **H. Lee**. *Under Revision for ICML*. 2025. [pdf]

[C4] A Hypothesis on Black swan in Unchanging Environments.

H. Lee, C. Park, D. Abel, M. Jin. *ICLR*. 2025. [pdf]

[C3] Pausing Policy Learning in Non-stationary Reinforcement Learning.

H. Lee, M. Jin, J. Lavaei, and S. Sojoudi. *ICML*. 2024. (Oral, Top 1.2%) [pdf/codes/talk]

[J3] Policy-based Primal-Dual Methods for Concave CMDP with Variance Reduction.

D. Ying, M. Guo, **H. Lee**, Y. Ding, J. Lavaei, and Z. Shen. *Under Revision for JAIR*. 2024. [pdf /codes]

[C2] Tempo Adaptation in Non-stationary Reinforcement Learning.

H. Lee, Y. Ding, J. Lee, M. Jin, J. Lavaei, and S. Sojoudi. *NeurIPS*. 2023 [pdf/codes/slides]

[J2] Beyond Exact Gradients: Convergence of Stochastic Soft-Max Policy Gradient Methods with Entropy Regularization.

Y. Ding, J. Zhang, **H. Lee**, and J. Lavaei. *IEEE TAC*. 2024 [pdf]

[C1] Initial State Interventions for Deconfounded Imitation Learning.

S. Pfrommer, Y. Bai, **H. Lee**, and S. Sojoudi. *IEEE CDC*. 2023. [pdf]

[J1] Explainable Deep Learning Model for EMG Based Finger Angle Estimation Using Attention.

H. Lee, D. Kim, and Y. Park. *IEEE TNSRE*. vol. 30, pp. 1877-1886 2022. [pdf/codes]

Work Experience

Meta

May. 2025 – Sep. 2025

Incoming Research Scientist Intern

Monetization (Ranking and Generative AI) team

- Research on recommendation system

University of California, Berkeley

Aug. 2022 –

Graduate Student Researcher

Advisor: Prof. Somayeh Sojoudi

- Research on **non-stationary reinforcement learning** and **optimization** for distributional shift data.

OUTTA / [Homepage/ LinkedIn]

Aug. 2021 –

Co-Founder

South Korea

- Provide an online AI education lecture to over **200+ underprivileged students** in South Korea every year.

Knowledge AI

Jul. 2021 – Jul.2022

Machine Learning Engineer

Boston, MA

- Develop a **bayesian inference algorithm** that quantifies students' understanding of math topics using Python
- Develop question-recommendation deep learning algorithm on Math online learning system using python.

Seoul National University

Mar. 2021 – Nov. 2021

Undergraduate Research Intern

Soft Robotics & Bionics Lab

- Propose **attention-based sequential decision making algorithm** to predict finger angles based on muscle activation on forearm using Python. Improved prediction accuracy over 10 %

Seoul National University

Sep. 2020 – Jun. 2021

Undergraduate Research Intern

Robot Learning Lab

- Develop **deep generative Q learning algorithm** to reconstruct a reward kernel using Python [pdf] [video]

Academic Activity

Reviewer ICLR 2024-2025, ICML 2024-2025, NeurIPS 2024, RLC 2025, AISTATS 2025
Program Chair Committee AAAI 2025

Teaching Experience

Graduate Student Instructor, Statistics and Data Science for Engineers Spring 2025
Graduate Student Instructor, Dynamic Systems and Feedback Fall 2024
Teaching Tutor, Math and Physics for Freshman Spring 2019, Spring 2020
Teaching Assistant, Dynamic Fall 2019
Teaching Assistant, Mechanical Product Design Fall 2020

Grants and Honors

Berkeley Summer Research Fellowship | *Mechanical Engineering Department* Summer 2024
NeurIPS scholar award | *Conference on Neural Information Processing Systems* Dec. 2023
Kwanjeong Abroad Scholarship | *Kwanjeong Educational Foundation* Fall 2022 – Present
Berkeley Fellowship for Graduate Study | *Graduate Division* Fall 2022 – Spring 2023
National Science & Technology Scholarship | *Korea Student Aid Foundation* Spring 2017, Fall 2019
Spring 2020, Fall 2020
Certificate of Appreciation (OUTTA) | *Dean, college of Engineering, Seoul National University* Jun. 2021
Scholarship to Academic Excellence | *Seoul National University* Spring 2015, Fall 2015
Spring 2016, Fall 2016

Graduate courses

Specialization: Non-convex Optimization & Reinforcement Learning

Theoretical statistics I, II, Probability Theory I, II
Convex Optimization (convex optimization, robust optimization)
Mathematical Programming II (Advanced optimization theory, non-convex optimization)
Advanced control system I (canonical state-space representation forms, Lyapunov stability, LQR control)
Experiential advanced control design I, II (model predictive control, kalman filter)
Linear System, Nonlinear System

Technical Skills

Languages: Python (Advanced), MatLab (Advanced), C++
Software library, platform : Pytorch (Advanced), Tensorflow. Gurobi (Advanced), CPLEX (Advanced)