

# Hyunin Lee

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## Education

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**University of California, Berkeley**

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

CA, United States

*Aug. 2022 –*

**Seoul National University**

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

Seoul, Rep.of.Korea

*Mar. 2015 – Feb. 2022*

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

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[P1] Prospect Theoretic Rationality: Human Irrationality Can Indeed Accelerate Learning

H. Lee, C. Park, S. Sojoudi, N. Mehr. Working draft.

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

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

[C4] A Black Swan Hypothesis: The Role of Human Irrationality in AI Safety.

H. Lee, C. Park, D. Abel, M. Jin. *ICLR. 2025 & ICLR 2025 Advances in Financial AI Workshop (Oral, Top 1.2%)*. [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*. 2025 [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

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**Meta**

*Incoming Research Scientist Intern*

May. 2025 – Sep. 2025

*Ranking team*

- Research on recommendation system and develop ranking algorithms.

**OpenAI**

*Research Associate*

Mar. 2025 –

*Human Data (Research) team*

- Engage with the safety and preparedness team to evaluate an AI agent's ability to replicate ML research and to create a comprehensive rubric that defines objective success criteria for accurately reproducing given ML papers.

**University of California, Berkeley**

*Graduate Student Researcher*

Aug. 2022 –

*Advisor: Prof. Somayeh Sojoudi*

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

**OUTTA** / [Homepage/ LinkedIn]

*Co-Founder*

Aug. 2021 –

*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 Activitiy

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**Reviewer** ICLR 2024-2025, ICML 2024-2025, NeurIPS 2024-2025, RLC 2025, AISTATS 2025

**Program Chair Committee** AAAI 2025

## Teaching Experience

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**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

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**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

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*Specialization: Non-convex Optimization & Reinforcement Learning*

**Theoretical statistics I, II, Probability Theory I, II**

**Convex Optimization** (convex optimziation, 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

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**Languages:** Python (Advanced), MatLab (Advanced), C++

**Software library, platform :** Pytorch (Advanced), Tensorflow. Gurobi (Advanced), CPLEX (Advanced)