

# Hyunin Lee

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## Education

### University of California, Berkeley

*Ph.D. in Mechanical Engineering / Advisor: Javad Lavaei, Somayeh Sojoudi*

CA, United States

Aug. 2022 –

### Seoul National University

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

Seoul, Rep.of.Korea

Mar. 2015 – Feb. 2022

## Research Interest

Reinforcement Learning, Optimization

## Publications

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

H. Lee, Y. Ding, J. Lee, M. Jin, J. Lavaei, and S. Sojoudi. *NeurIPS*. 2023

[J1] Beyond Exact Gradients: Convergence of Stochastic Soft-Max Policy Gradient Methods with Entropy Regularization.

Y. Ding, J. Zhang, H. Lee, and J. Lavaei, Under revision for *IEEE TAC* [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]

## Research Experience

### University of California, Berkeley

*Graduate Student Researcher*

Aug. 2022 –

*Advisor: Prof. Javad Lavaei, Prof. Somayeh Sojoudi*

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

### Seoul National University

*Research Intern*

Mar. 2021 – Nov. 2021

*Soft Robotics & Bionics Lab*

- Develop attention based deep learning algorithm to predict 14 finger angles based on muscle activation on forearm using Python

### Seoul National University

*Research Intern*

Sep. 2020 – Jun. 2021

*Robot Learning Lab*

- Develop DQN reinforcement learning algorithm that utilize VAE-GAN as a reward function using Python [pdf] [video]

## Work Experience

### Knowledge AI

*Machine learning engineer*

Jul. 2021 – Jul.2022

*Boston, MA*

- Develop an Bayesian algorithm that quantifies students' understanding on each math topic using python
- Develop question-recommendation deep learning algorithm on Math online learning system using python
- Improved Jordan students' performance who use math online learning system by implementing my algorithm

## Scholarships and Honors

Kwanjeong Abroad Scholarship | *Kwanjeong Educational Foundation*

Fall 2022 – Present

Berkeley Fellowship for Graduate Study | *Graduate Division*

Fall 2022 – Present

National Science & Technology Scholarship | *Korea Student Aid Foundation*

Spring 2017, Fall 2019

Spring 2020, Fall 2020

Certificate of Appreciation (AI Tech Play) | *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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**Theoretical statistics I, II**

**Convex Optimization**

**Advanced control system I**

**Experiential advanced control design I, II**

## Technical Skills

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

**Software library, platform :** Pytorch (Advanced), Tensorflow