Hyunin Lee

Email : hyunin@berkeley.edu | linkedin | github | homepage

Education

University of California, Berkeley — CA, United States
Ph.D. in Mechanical Engineering / Advisor: Javad Lavaei, Somayeh Sojoudi — *Aug. 2022 –*

Seoul National University — Seoul, Rep.of.Korea
B.S in Mechanical Engineering; summa cum laude — *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 — Aug. 2022 –
Graduate Student Reseacher — *Advisor: Prof. Javad Lavaei, Prof. Somayeh Sojoudi*
- Research on non-stationary reinforcement learning and non-convex optimization for distributional shift data.

Seoul National University — Mar. 2021 – Nov. 2021
Research Intern — *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 — Sep. 2020 – Jun. 2021
Research Intern — *Robot Learning Lab*
- Develop DQN reinforcement learning algorithm that utilize VAE-GAN as a reward function using Python [**pdf**] [**video**]

Work Experience

Knowledge AI — Jul. 2021 – Jul.2022
Machine learning engineer — *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

Theoretical statistics I, II
Convex Optimization
Advanced control system I
Experiential advanced control design I, II

Technical Skills

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