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

[**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**]

[**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/codes**]

Work 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.

Knowledge AI — Jul. 2021 – Jul.2022
Machine Learning Engineer — *Boston,MA*
- Develop a Bayesian inference algorithm that quantifies students' understanding of each math topic 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 deep learning 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 Q-learning algorithm that utilizes VAE-GAN as a reward kernel using Python [**pdf**] [**video**]

Scholarships and Honors

NeurIPS scholar award | *Conference on Neural Information Processing Systems* — 2023
Kwanjeong Abroad Scholarship | *Kwanjeong Educational Foundation* — Fall 2022 – Present
Berkeley Fellowship for Graduate Study | *Graduate Division* — Fall 2022 – Present

Graduate courses

Specialization: Non-convex Optimization & Reinforcement Learning

Theoretical statistics I, II
Convex Optimization (convex optimziation, robust 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)

Technical Skills

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