JaeHeon Lee

Pronounce "Jaeheon Lee" as "Jay-hun Lee"

Resume Summary

Motivated undergraduate student at KAIST with a passion for computational neuroscience. I am keen on researching how information is represented neurally, aiming to unravel the mechanisms of encoding and decoding information in the brain.

Research Experience

Reinforcement Learning project

2020-8- 2020-11

AIBrain Lab, Sangwan Lee, Haram Joo

• Began self-study in deep learning and reinforcement learning
• Implemented a strategy code using Deep Q-learning algorithm to identify and counteract opponents' strategies in the prisoner's dilemma theme with Axelrod repository

Experimental Laboratory Internship

2020-12- 2021-2

Systems Neuro Lab, Min Whan Jung, Jonghan Shin

• Learned about behavior experiments collecting electrophysio-logical data from trained rats' hippocampal pyramidal neurons
• Read and presented related research papers, and supported Matlab cell cutting analysis

fMRI-based Creative Research Project

2021-6- 2021-12

AIBrain Lab, Sangwan Lee, Yoondo Sung; link

• Conducted creative research project inspired by the biologically plausible NN topic and prior research in AIBrain lab
• Diverged from traditional studies by employing Multi-voxel pattern pattern analysis, 'searchlight' analysis and svm-based regression, enabling the observation and analysis of error signal propagation from a spatiotemporal perspective in a whole brain

Data Scientists in histopathology

2022-3- 2024-2

Deep Bio Inc., Hyeyoon Chang, Tae-Yeong Kwak; link

• Korea's mandatory Industrial Technical Personnel program
• Task-oriented research aimed at elucidating the prognostic efficacy of AI products in prostate adenocarcinoma
• Research on analyzing the morphology exhibited in various cancer types' histopathological images using deep learning
• Developing various algorithms for image quantification and enhancing user convenience; 2 Patents (1 Granted, 1 Pending)

Computational Cognitive Neuroscience Lab

2023-10- present

CoCo Lab, Yul HR Kang, Jeroen Olieslagers, Jeong Jae Park

• Developing cognitive game with HTML/JS

Education

KAIST, Korea Advanced Institute of Science and Technology

2019-3- 2021-12, 2024-3- present

• B.S. in Biology, AI designated major, NYU minor program in EE
• GPA: 3.84/4.30 (95.40), Major GPA: 3.96/4.30

Personal Info

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Courses

Biology
General Biology A0, Microbiology A0, Biochemistry I, II A0, A+, Molecular Biology P, Cell Biology B+, Neuroscience I, II A0, A-, Neuronal Control of Behavior A-, Genetics P, Biochemistry Experiment A0, Bio-Imaging, Cell and Biological Engineering in-progress

Computer Science, AI
Introduction to Programming A+, Data Structure A+, Discrete Mathematics P, Statistical Machine Learning A+, Brain-Inspired Machine Intelligence A0, Introduction to Algorithms P, (CS231n in stanford), Data-Driven Decision Making and Control in-progress

Mathematics
Calculus I, II B+, P, Introduction to Linear Algebra A- (Real Analysis, Linear Algebra, Abstract Algebra, Topology, Measure Theory, Probabil-istic Theory, Differential Geometry with @enjoyingmath9346, notes are in velog.io/@jaeheon-lee/series/Math)

Electrical Engineering
Circuit Theory, Signals and Systems in-progress

Skills

Python, Matlab, Java, JS, HTML pytorch, matplotlib, keras, pandas, numpy, pyro, JsPsych

Languages

Korean (native)
English (fluent) - TOEFL 92
Chinese (basic) - HSK 4