Brian Lee

bjlee25@stanford.edu junister.github.io GitHub: junister LinkedIn: brianjunlee

Education

Stanford University **Stanford, CA**
Symbolic Systems B.S. 2021–2025
Coursework: Deep Learning, Machine Learning for Neural Data Analysis, Artificial Intelligence Principles, Operating Systems Principles, Probability for Computer Scientists, Mathematical Foundations of Computing, Programming Abstractions, Linear Algebra and Matrix Theory
Involvements: Stanford Brain-Computer Interface (BCI), Wu Tsai Human Performance Alliance Scholar

Experience

Stanford University Wu Tsai Human Performance Alliance **Stanford, CA**
CS Research Intern April 2022–Sept 2022
- Used **MATLAB** to optimize joint-muscle parameters on **OpenSim** models.
- Performed a thorough literature review of musculoskeletal models and designed a solution to their joint angle issues.
- Presented my results at the Wu Tsai Human Performance Alliance poster session.

University of Guam YSREM **Mangilao, Guam**
Research Intern June 2019–August 2019
- Developed a disease transmission model for the SARS virus based on data from the 2002 outbreak in Hong Kong.
- Used **MATLAB** and analytical methods to solve a nonlinear system of equations to model disease dynamics.
- Examined the effectiveness of different treatments with game theory principles.
- Collaborated with other researchers to write a report on our work before the 2020 COVID-19 outbreak.

Projects

ML Palm Reader Apr 2023–June 2023
- Collaborated to build a recurrent neural network + transformer model with **Python** libraries like **TensorFlow** and **scikit-learn** to classify over a dozen different hand gestures.
- Incorporated a hand landmarker in a dataset of 4000+ examples for real-time gesture detection and implemented various features to improve the model to reach 90% accuracy.

Active Hawkes Feb 2023–Apr 2023
- Collaborated with other researchers to implement a Bayesian algorithm in **Python** to identify candidate neuron sequences and then probe them in order to confirm their existence.
- Modeled neural activity using a Hawkes process, which is a type of self-exciting point process.

Mario Kart Wii AI Oct 2022–Dec 2022
- Collaborated with a classmate to use **Python** to train a convolutional neural network to drive around a racetrack in a Mario Kart Wii on an emulator.
- Presented development and results in a paper and video.

Skills

Proficient: Python (NumPy, TensorFlow, PyTorch), C++, LaTeX, PyCharm
Familiar: MATLAB, C, Assembly, Git/Terminal, VSCode

Awards

National AP Scholar July 2020
Rensselaer Medalist May 2020
Joint Mathematics Meeting Undergraduate Group Poster Session; Outstanding Poster Jan 2020
University of Guam Math Day Competition; 1st Place Apr 2019
International Young Scientists Innovation Exhibition; Silver Medal Aug 2018
University of Guam Islandwide Science Fair; 2nd place May 2018