Jesse Hurtado III

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Pushing research forward through data driven solutions

EDUCATION

UC Los Angeles | Los Angeles, CA Graduated 2023
Bachelor of Science in Neuroscience | Computational neuroscience concentration

- GPA | 2.8
- GRE | 161 Verbal, 155 Quantitative, 4 Analytical Writing

SKILLS & TECHNICAL TOOLS

Programming: Matlab (Advanced), Python (Proficient), R (proficient), Bash (Basic)

Technologies: Github, Microsoft Office Tools, Power Automate, Jupyter Notebook, Matplotlib, Pandas, Linux

Spoken Languages: Spanish (Native Fluency), English (Native Fluency)

PROJECTS

2D Spatial Rate Maps

- Performed a rigorous analysis of spatial neural activity of hippocampal CA1 neurons using MATLAB. Produced a series of analysis functions that employ various statistical analysis techniques to extract, process, and visualize the spiking data and generate a 2-dimensional histogram of the average firing rate over the experimental environment.

Point Source Approximation Simulations

- Used MATLAB to create a program that simulates the firing of two neurons in a homogenous extracellular medium based on Euler's Method and using a mathematical model to approximate the current in the medium at a distance, treating the source as a point.

EKG Analysis

- Used Python to operate an Arduino and a micro-EKG simultaneously during bench press workout to calculate change in voltage during concentric and eccentric muscle action to investigate possible power output and voltage correlation.

WORK EXPERIENCE

Research Assistant Undergraduate - UCLA Center for Neurophysics, Los Angeles

- Studied spatial mapping activity of hippocampal CA1 neurons. Pre-processed data, spike sorting, signal filtering, continuous-time signal processing. Analysis, spike detection, signal separation, wave form / feature extraction, principle component analysis, interpolation and signal alignment. Developed a machine learning algorithm in Python (pytorch) for spike detection and feature extraction, imported processed signals to MATLAB

Applied Math Tutor - UCLA Curtis Center for Mathematics / Barack Obama Prep Academy, Los Angeles

- Taught and tutored 7th and 8th grade mathematics bilingually (English and Spanish) to students in underserved communities. Curriculum was geared to push towards critical inquiry and realizing mathematical intuition through real world examples and applications.

Data Entry Intern - Release of Information Dept. Kaiser Permanente, San Francisco

- Collected and entered both quantitative and qualitative data that allowed me to assess overall efficiency of the department and suggest changes and improve overall workflow. Participated in a data collection that required me to generate data by monitoring active intake and fulfillment procedures, analyze the statistics and detect possible sources of redundancy, choke points, or otherwise obstacles that had caused the department to be severely behind on releasing patient requests during the COVID-19 pandemic.