

# Jesse Hurtado

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*Pushing research forward through data driven solutions*

## EDUCATION

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**UC Los Angeles** | Los Angeles, CA Graduated 2023  
Bachelor of Science in Neuroscience | Computational Neuroscience Concentration

**San Diego State University** | San Diego, CA Expected Graduation Date  
Master of Science in Big Data Analytics May 2026

## SKILLS & TECHNICAL TOOLS

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**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

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### 2D Spatial Rate Maps - Neural Place Cell Imaging

- 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 firing activity of these cells during experimental trials to investigate the roll of place cells in spacial navigation and awareness. Used *in vivo* implanted electrode array for recording electrophysiological data in mice.

### 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, then using point source approximation to approximate the current in the medium at a distance.

### 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

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### Research Assistant Undergraduate - UCLA Center for Neurophysics, Los Angeles

- Studied spatial mapping activity of hippocampal CA1 neurons. Main responsibilities included data processing, signal analysis, and database management, as well as developing software packages for experimental trials and working to automate data processing algorithms where applicable. Assisted in maintaining lab equipment and scheduling.

### 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 students 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 data to assess overall efficiency of the department and suggest changes and improve overall workflow. Generated data by monitoring active intake and fulfillment procedures and identified possible sources of redundancy, choke points, or otherwise obstacles that had caused the department to be severely behind on meeting patient requests during the COVID-19 pandemic.