ISAAC MENCHACA

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EDUCATION

University of California, Riverside *B.S. Bioengineering*

Additional Courses: Machine Organization and Assembly Language, Object-Oriented Programming, and Data Structures and Algorithms.

TECHNICAL STRENGTHS

- **Programming and Version-Control**: Python, C++, Swift, Matlab, Shell-scripting/ Unix, Git
- **Data Collection, Merging, and Cleaning**: RDMS, SQLAlchemy / ipython-sql, Pandas, Numpy
- **Exploratory Data Analysis, Machine Learning**: Scikit-learn, Hacker Statistics, Scipy, Statsmodels
- **Data Visualization**: Seaborn, Matplotlib, Plotly

EXPERIENCE

Cognitive and Neural Computation Lab June 2019 - Present
Research Assistant — PI: Dr. Megan Peters

- HIPAA/ CITI certified. Responsible for recruitment and maintenance of research participant forms (Subject Eligibility Criteria, MRI Screening, Research Informed Consent, and Research Participant Rights).
- Maintained strong documentation skills of project data and analysis using dedicated directories and git-version control.
- Responsible for collection of behavioral, EEG, and fMRI data. (Psychotoolbox, psychoPy).
- Documented a preprocessing protocol and pipeline to clean and format pupillometry, EEG, and fMRI , and analyze EEG and fMRI data. (Matlab: EEGLAB, ET Artifact removal, SPM; Python: Jupyter Notebooks, Scikit-Learn, Nipype, Numpy, Scipy, Matplotlib/ Seaborn, Pandas; Other: FSL).
- Presented project at Neuromatch Academy demonstrating how regions of the visual cortex can infer color content from grayscale images (Multi-Output Linear Regression, K-Means Clustering, Scikit-Learn).

Chrono-Biological Alarm Clock October 2018 - May 2019
Senior Capstone Project

- Designed a system that prevents users from waking up during slow wave sleep (SWS), a factor of preventing morning grogginess.
- Wrote an IRB for approval of human subject experimentation, and designed a working prototype with a budget of $1000 (only $150 used).
- Set a Bluetooth connection with consumer-grade EEG and self-made iOS app to receive real-time microvolt data, and programmed an iOS app to undergo real-time power spectral analysis. (Analyzed with Python, designed with Swift, Objective-C).
- Gave poster presentation of system to Bioengineering faculty and peers. Top project by faculty.

Citrus Clonal Protection Program October 2018 - May 2019
Diagnostics Assistant — PI: Dr. Georgios Vidalakis

- Assist in disease diagnostics to introduce, investigate, and maintain the safe mechanism of citrus varieties into California with accordance to state (CDFA) and federal policies (USDA).
- Undergo general duties including: lab clean-up, autoclave, assistant training, creating labels,retrieving samples, and preparation of chemical solutions and diagnostic samples.
- Perform total nucleic acid extraction, purification, quantitation, and PCR/ qPCR (SYBR Green and Taqman assays) for viroid/ pathogen detection.
- Organize and selectively collect queried sequence data from BLAST database using Unix, Cyberduck, and UCR's SSH cluster system.