Brian Barry

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Education

University of California, San Diego   **March 2020**

   BS: Cognitive Science (Machine Learning and Neural Computation)
   Minor: Mathematics

Skills

Programming

- Python + Jupyter Notebooks (2 years)
  - Statistical analysis and data visualization
  - Machine learning (supervised and unsupervised)
  - Modeling and simulation
  - Signal processing
  - Web scraping and API access

- SQL (Coursera certificate: Databases and SQL for Data Science)
- MATLAB (1.5 years)
- JavaScript (1 year)
- HTML & CSS
- R
- Version control: Git

Data visualization

- Tableau **+** D3.js **+** Matplotlib

Other

- Fluent in French

Experience & Internships

Undergraduate Research Assistant, Voytek Lab, UCSD   **September 2019 - present**

   Assessing the correlation between spatial and temporal decompositions of neural spiking data using Python.
   - Built pipeline to compute correlations between spectral exponents of eigenvalue spectra (from PCA) and power spectra (from FFT)
   - Implemented computational model to simulate data
   - Presented findings at the Neuromatch Conference (talk) and Brain Criticality Conference (poster)

Undergraduate Research Assistant, Swartz Center for Computational Neuroscience   **April 2019 - present**

   Analyzing EEG data from a rhythmic control task, by applying a data cleaning and clustering pipeline using EEGLAB and MATLAB.
   - Writing scripts to automate ICA decomposition, epoching, fitting dipoles, and plotting figures
   - Organizing ERP, dipole and ERSP component clusters with interactive HTML visualization
   - Computing statistical significance of component clusters

Founder, Major Map Initiative, UCSD   **January - August 2020**

   Led the development of majormap.ucsd.edu, a web based student organization intended to help students select and understand their majors with greater depth. The website currently has an interactive applet that displays course prerequisite maps with D3.js, with more features under development.
   - Implemented web scraping script in Python to collect course prerequisites
   - Designed front end for website
   - Recruited new members

Undergraduate Research Assistant, UC San Diego Health   January - June 2019
    Conducted EEG neurofeedback experiments and pupillometry assessments on schizophrenic and schizoaffective subjects.

Intern, Jet Propulsion Laboratory   June - August 2014
    Organized and compiled Voyager I residual radio data from Unix into Excel.

Teaching Experience

Instructional Assistant, Cognitive Science, UCSD   January - March 2020
    Led discussion and graded assignments for COGS 101A (Sensation and Perception).

Extracurricular Activities

Community Service Chair, Sigma Phi Epsilon, UC San Diego   January - September 2019
    Sought out and organized community service opportunities for the chapter.