

Brian Barry

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Education

University of California, San Diego

March 2020

BS: Cognitive Science (Machine Learning specialization)

Minor: Mathematics

Skills

Programming [skills]

Full-stack development

Data Engineering

Data Science

High Performance Computing

Signal Processing

Git

Unit Testing

Programming [languages]

Python (5 years)

TypeScript/JavaScript + HTML + CSS (4 years)

SQL (3 years)

Bash + Linux (3 years)

C/C++ (1 year)

Go (1 year)

Web/Application Technologies

React (3 years)

Django (1 year)

Docker (1 year)

Express (1 year)

MongoDB (1 year)

Flask (1 year)

NGINX

Experience

Associate Data Scientist, Atec Spine

January 2023 - February 2024

Developed algorithms for medical data processing and data engineering infrastructure

- Engineered machine learning pipelines to classify medical data (Python)
- Led and managed the development of a data visualization app
- Developed Azure microservices for ETL pipelines (Python/C/Go)
- AB tested embedded machine learning algorithms for neuromonitoring device (MATLAB/Python)

Full Stack Software Engineer, UCSD Health

January 2022 - January 2023

Developed dashboard applications and data engineering pipelines for brain imaging research

- Engineered Express/React/MySQL dashboard to automatically track cron job scheduling
- Improved Django/Plotly/MySQL application monitoring ETL processes
- Maintained Python/Bash ETL pipeline loading metadata into MySQL database

Data Analyst, Mutual of Omaha Mortgage

September 2021 - January 2022

Worked on a growing data analytics team to integrate data science oriented workflows

- Predicted customer retention with machine learning pipeline in Azure
- Automated document scraping and data entry workflows with Selenium (Python)
- Developed PowerBI dashboards and Excel workbooks to visualize financial statistics

Research Assistant, Voytek Lab, UCSD

September 2019 - February 2021

Investigated the correlation between spatial and temporal decompositions of neural spiking data using high performance computing (Python/Linux).

- Built pipeline to compute power and eigenvalue spectra (from FFT & PCA), determine their exponents with linear regression, and measure their correlation
- Implemented Monte Carlo Markov chain model to simulate neural data
- Presented findings at two conferences [[poster link](#)]

Research Assistant, Swartz Center for Computational Neuroscience**April 2019 - February 2021**

Analyzed EEG data from a rhythmic control task using MATLAB and Python, and wrote a plugin for EEGLAB (a MATLAB toolbox) incorporating a spectral parametrization module.

- Wrote scripts to automate ICA decomposition, epoching, and plotting figures
- Organized EEG component clusters and statistical tests with interactive HTML visualization
- Wrote source code and designed GUI components for the EEGLAB plugin.

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.

- Implemented script in Python to scrape online course catalogs
- Developed graph traversal algorithm and designed front end for applet with jQuery
- Recruited new members

Project Portfolio**[CLI Guitar Amplifier](#) (C++)****October 2023 - Present**

A digital guitar amp that runs in the Unix command line for MacOS. Incorporates digital signal processing algorithms for equalization and distortion.

[Visual Shell](#) (Electron/React/Flask)**May 2023 - Present**

A UI for file systems for developer productivity. Includes shortcuts to navigate a file system, and extensions to explore contents of binary files.

[CollabSource](#) (React/Go/Python)**January 2024 - Present**

Full stack web application.

- Engineered controllers for REST API
- Designed recommender system architecture
- Developed frontend

Extracurricular Activities**Community Service Chair, Sigma Phi Epsilon, UC San Diego****January - September 2019**

Sought out and organized community service opportunities for the chapter.