

JULIE LAI

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EDUCATION

University of California, Berkeley

M.S. in Information and Data Science

August 2020 - August 2021

College of Letters and Science, B.A. in Physics and Astrophysics

August 2016 - May 2020

WORK EXPERIENCE

Bioinformatics Intern

May 2019 - June 2020

Finkbeiner Lab, Gladstone Institute of Neurological Disease

San Francisco, California

- Refining semi-supervised machine learning models with Python to predict ALS using patient genomic data
- Visualizing trends in patient genomic data using matplotlib and seaborn graphs
- Compacting large amounts of patient genomic data into a concise dataframe of patient versus variants

Astrophysics Research Assistant

February 2018 - February 2019

Nugent Research Group

Berkeley, California

- Categorized behavior supernovae light curves to understand causes a supernova's final explosion
- Fitted H-alpha peaks to Gaussian curves using Python to determine significance compared to noise

PROJECTS

Modelling Stellar Spectra

May 2020

- Built a generative model to predict what a stellar spectrum should look like for a given set of stellar properties using linear models and MCMC optimization
- Used this model to infer the properties of stars by fitting their spectra
- Visualized predicted spectra and properties of stars using matplotlib and seaborn

Quantum Interference and Entanglement

November 2019

- Demonstrated the validity of quantum mechanics using polarization entangled photon pairs
- Filtered through raw photon count data to create scatter plots of counts versus polarization angle using pandas and seaborn
- Fitted scatter plots to line of best fit and analyzed statistical errors using sci-kit learn

LEADERSHIP

Media Director

January 2019 - May 2020

The STEMInist Chronicles

Berkeley, California

- Executing the photoessay pipeline which involves interviewing the individual, transcribing the interview, and editing the photoessay
- Promoting representation of women in STEM by publishing photoessays on social media platforms and reaching audiences larger than the university

Cultural Peer Mentor

August 2018 - May 2020

Berkeley International Study Program

Berkeley, California

- Providing guidance and resources to visiting international students to make successful cultural and academic transitions
- Organizing events in the Bay Area to explore American culture that is inclusive for a large group of students of different backgrounds

STRENGTHS

Technical

Python (numpy, pandas, scikit-learn, matplotlib, seaborn), Microsoft Excel, LaTeX, Bash, LabView, R, SQL

Graphic Editing

Adobe Photoshop, Adobe Lightroom, Adobe Premiere Pro, Adobe Illustrator, Procreate

Languages

Conversational Chinese and Spanish