Olivia Fang

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Github project portfolio
Linkedin
Personal website

Professional Summary

Honors Data Science student proficient in Python, Java and SQL, with a focus on statistical methods, predictive modeling, and data visualization. Demonstrated experienced decision-making skills for data analysis through research and internship that centered on improving accessibility to healthcare services and supporting minority representation in governance.

Education

University of Washington, Seattle
09/2022 - 03/2025

- Bachelor of Science in Statistics with Honors: Data Science
- Purple and Gold Scholar and Dean's List Scholar

Key Skills

Data visualization | Tableau, Observable (VegaLite, d3.js), Seaborn, ggplot2
Data analysis and statistical testing | uncover behaviors of data; make educated decisions by comprehending data; train prediction-making models; find evidence supported by data
Programming languages
Python | pandas, matplotlib, seaborn, scikit learn, pytorch
| optimal solution search algorithms with limit on runtime and space complexity
Java | object oriented programming, data structures and algorithms, affordance analysis and iterative design thinking
R | statistical computations in R-studio; ggplot2
SQL | optimize queries for data retrieval, manipulation, management; schema and structure designs of a database

Experience

ACORN International | Supporting Minorities in Electric Cooperation Project Data Analytics Intern
July 2023 - March 2024

[R] [Python] [JavaScript] [t-test]

- Conduct pre-processing and statistical testing such as t-test and F-test on governance data to find statistical evidence of difference in make up of board of leaderships, within R-studio
- Data analysis with python for showing exclusion of women and minorities
- Presented outcome of states of interest, such as Georgia, to decision makers of ACORN via Observable notebook

Speech & Hearing Lab | Audiogram Modeling and Accessible Hearing Test Research Assistant
September 2024 - Present

[Python] [Scikit-Learn] [PCA] [Active Learning] [Cross-decomposition]

- Aiming to develop a resource-efficient APP for audiogram testing, using easily measurable features like age, gender, and digit in noise, independent of reliance on professionals and specialized equipments
- Using appropriate ML models, starting with linear regression, predict the audiogram measurements reduced to principal components, and achieved a MSE of 14 dB on a 0-110 dB scale
- Applied cross-decompositional techniques, such as partial least squares regression, to achieve reduction in dimension while not losing important features with small variance.
- Continuing research on the addition of other measurements as predictors to further minimize error; assessing non-linear dimensionality reduction techniques and multivariate analysis such as canonical correlation analysis

UW Data Science Honors | Tango Movements Classification and Analysis Research Assistant
September 2024 - Present

[Python] [Scikit-Learn] [Clustering] [Classification] [JavaScript]

- Visualize acceleration and angular velocity data recorded by motion sensors on Observable
- Conducted hierarchical clustering to identify latent patterns or anomalies, in order to improve generalizability of the movement classifying algorithm

UW WXML Lab | Cryptography vs Divination Systems Analyst
Dec 2023 - June 2024

[Python] [Scikit-Learn] [Pytorch] [Xgboost]

- Phase 1 - Using python to artificially generate data and write methods to calculate randomness and mutual dependence between planets; create interactive visualizations through Observable to present findings
- Phase 2 - Conduct machine learning experiments with general information data as control group, with additional astrological data as experiment group, train and tune various models to show independence between astrological data and astrological apps' results.
- At the end of each phase, present progress at research symposium with team members