Maxwell Chu

github.com/maxchu0929 | maxchu0929@g.ucla.edu | linkedin.com/in/maxchu0929 | (951) 903-2639

Education

University of California, Los Angeles (GPA: 3.928) Exp. June 2026
Los Angeles, CA

B.S. Statistics and Data Science
Minors in Computer Science, Bioinformatics, and Mathematics

Relevant Coursework: Python, Data Science Technologies, Data Science Fundamentals, Data Analysis & Regression, Databases, Statistical Models & Data Mining, Machine Learning, GenAI with LLMs (Coursera), Algorithms & Complexity, Computational Statistics with R, Linear Models, Linear Algebra, Real Analysis

Relevant Experience

Data Engineer, UCLA Dept. of Medicine Statistics Jan. 2025 – Jun. 2025

- Engineering an interactive dashboard in RStudio and a MySQL database using REDCap to enable researchers at the UCLA Alzheimer's Disease Research Center to interface with various projects and genomic data.
- Employing best practices in Git in professional setting for project legibility; cleaning & optimizing back-end code.

ML Classification of Spotify Genres | *SciKit-Learn, TensorFlow* Sep. 2024 – Dec. 2024

- Built LASSO logistic regression and random forest models to do robust feature selection; visualized feature importance by genre for analysis.
- Monitored neural network results to analyze for overfitting; solved using dropout and weight decay, improving test accuracy from 30% to 55%; tuned NN hyperparameters via grid search to further improve to 60.4%.
- Designed EDA visualizations of multicollinearity and variable distributions by genre using Matplotlib; applied insights to preprocess a data set of 114,000 rows and 20 cols and reduce problem complexity for effective modeling.
- Initiated meetings, assessed individual strengths to delegate work, organized project goals and methods, and discussed technicals in an 8-page report.

CourseKata Data Analysis, DataFest 2024 | *RStudio, Tableau* Apr. 2024

- Preprocessed and merged several large data sets of student website interaction totaling 300,000+ rows and 50+ columns; conducted EDA to explore relevant questions about user experience and do informed feature engineering.
- Verified pain points where student performance declined using t-tests and engineered features.
- Leveraged experience in data viz to quickly learn Tableau to design a dashboard and heatmaps; succinctly communicated analysis and analysis-based suggestions for improved student learning to CourseKata reps.
- Coordinated team's individual analyses into a focused objective; worked diligently under a 48-hour limit.

ML Classification of 2020 Election Outcomes | *RStudio* Jun. 2024 – Aug. 2024

- Assembled a Tidymodels modeling pipeline to build and fit random forest, boosted tree, bagged tree, naive bayes, and SVM models for binary classification; tuned hyperparameters via grid search and Bayesian optimization to improve test accuracy from 89% to 95%.
- Cut runtime cost by nearly 50% by parallel processing via the Future package and manually narrowing hyperparameter ranges.
- Designed EDA visualizations of variable distributions and class imbalances using ggplot; applied insights to make model-specific variable transformations.

Web Scraping & CNN Classification of Snakes | *Selenium, Keras* Sep. 2024 – Dec.2024

- Developed reusable code to web scrape images for any prompt, aggregating a data set of 3000+ snake images.
- Self-studied loss functions, backpropagation, and activation functions with Coursera to optimize sequential layers and parameters of CNN.
- Curbed CNN overfitting preemptively with image augmentation and dropout, achieving a 97.57% test accuracy.

Skills

Languages: R, Python, C++, LaTeX, MySQL, JavaScript
Developer Tools: RStudio, Jupyter, Git, Bash, MS Excel/Office, Google Cloud & Workspace, Tableau, Databricks
Libraries: (**General**) Pandas, NumPy, Tidyverse | (**ML**) PyTorch, TensorFlow, Keras, SciKit-Learn, Tidymodels | (**Data Viz**) Matplotlib, Plotly, ggplot | (**Web Scraping**) Selenium, Beautiful Soup, rvest
Soft Skills: Data Presentation, Self-Starter, Care for Details, Mettle, Quick Learner, Ambitions to Learn
Fun Stuff: Rock Climbing, Camping, Network Theory, AI, Philosophy of Mind & Language