Maxwell Chu

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Education

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

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

Relevant Coursework: Python & Data Science Technologies, Data Science Fundamentals, Data Analysis & Regression, Linear Models, Intro to ML, Supervised Machine Learning (Coursera), Statistical Models & Data Mining, Computational Statistics with R, Convolutional Neural Networks (Coursera), Linear Algebra

Relevant Experience

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

- Engineered LASSO logistic regression and random forest models for 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.

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.

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 comprehensive 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.

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.

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

- Building a comprehensive dashboard in R for researchers to easily collaborate and interface with health data.
- Communicating with supervisors to work autonomously on a variety of programming assignments.

Skills

Languages: R, Python, C++, LaTeX, SQL, JavaScript
Developer Tools: RStudio, Jupyter, Git, Bash, MS Office, Google Workspace/Excel, Tableau
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: Frank yet considerate communication, Taking initiative, Care for details, Critical reasoning, Calm under pressure, Quick learner, Written concision
Fun Stuff: Rock climbing, Camping, Network Theory, AI, Philosophy of mind and language,