ERIC CHU

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Education

University of California, Los Angeles — Los Angeles, CA
Bachelor of Science in Mathematics of Computation — *Oct. 2020 – Dec. 2024*

Technical Skills

Languages: Python, C++, SQL (Postgres), JavaScript, HTML/CSS, R, LaTeX, Markdown, Shell
Libraries and Frameworks: Pandas, Numpy, Scikit, Tidyverse, Matplotlib, Seaborn, React, Node.js, Gatsby, Streamlit
Developer Tools: Git, VS Code, xCode, Tableau, Microsoft Office, CLI, Homebrew, Conda, Jupyter-Notebook
Relevant Coursework: Data Mining, Machine Learning, Algorithms, Data Stuctures, Mathematical Optimization, Probability, Software Construction, Game Theory, Financial Mathematics, Actuarial Science, Calculus, Linear Algebra, Differential Equations, Discrete Structures, [Real, Complex, and Numerical] Analysis

Projects

NFL 4th Qtr EPA Predictor | *Python, Pandas, XGBoost, Tableau, StreamLit | BSA Research* **Sep - Dec 2024**
- Obtained and cleaned CSVs of 250k rows and 300+ columns of play-by-play data across several NFL seasons
- Designed zero-sum matrix of EPA as a Tableau viz with filters for users to modify parameters
- Created XGBoost regression model to predict passing EPA per defensive coverage in late-game situations
- Built Streamlit app which allows users to adjust features to create a situation for model to predict
- Collaborated football data research team with UCLA club, Bruin Sports Analytics (BSA)

Election Classification Models | *R, Tidyverse, Tidymodels RMarkdown | Course: Stats 101C* **Aug 2024**
- Created models to predict US presidential election winner in each county based on demographics
- Performed data exploratory analysis, cleaning, mining, visualization, and evaluation
- Used Tidyverse and Tidymodels to create workflow, k-nn predictive model, tune parameters, and calculate metrics

NFL Data Journalism Article | *SQL, Python, Pandas, Seaborn, Markdown | Link to article* **Sep 2024**
- Authored data article which analyzed notable NFL quarterbacks' reliance on their top receivers, published by BSA
- Used SQL to query through CSVs of yearly receiving data in order to retrieve stats for each team's rec. leader
- Created visuals with Seaborn and wrote article on Markdown.

NFL Season Predictor Models | *Python, Pandas, Scikit, Seaborn, Matplotlib | Course: CS M148* **Sep - Dec 2023**
- Collected NFL stats over several seasons to use as features to predict each team's success for a given season
- Used Python, Pandas and Scikit to create linear regression models for number of regular season wins and logistic classification models for which postseason round a team would likely finish in
- Used Numpy and Scikit for bootstrapping, training and testing data split, collecting metrics, and other techniques
- Visualized findings using Seaborn and Matplotlib

SaveStates | *JavaScript, React-Bootstrap, CSS, Git, HTML | Course: CS 35L* **Sep - Dec 2021**
- Co-developed website which allows users to log progress of their playthroughs of video games
- Contributed to front-end implementation using JavaScript and CSS via React-Bootstrap
- Enables uploads of data structures representing user profiles to backend databases

GhostRacer | *C++ | Course: CS 32* **Nov. 2020**
- Developed an action video game using C++ STL and principles of object oriented programming
- Created classes and objects through substantial utilization of inheritance and polymorphism
- Practiced manual memory management in C++

Work Experience

Lifeguard — June 2019 – Sep. 2021
The Town of North Hempstead — *North Hempstead, NY*
- Received excellent work assessment