MADHAN JEGANATHAN

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EDUCATION

University of California, Santa Barbara (UCSB) Santa Barbara, CA

Bachelor of Science (B.S.), Statistics and Data Science (GPA: 3.6/4.0) June 2023

Relevant Coursework: Statistical Machine Learning, Bayes Data Analysis, Design of Experiments, Regression Analysis, SAS Programming, Big Data Analytics, Stochastic Processes, Time Series

Los Angeles Pierce College Los Angeles, CA

Full Time Dean's Honor List June 2021

Relevant Coursework: Data Structures, Object Oriented Programming C++, Computer Architecture and Organization, Discrete Structures, Linear Algebra, Ordinary Differential Equations

PROJECT EXPERIENCE

World Happiness Report, UCSB, Santa Barbara April 2023-June 2023

- Applied several data analysis techniques to identify patterns, correlations, and outliers within the World Happiness Report dataset, which included data from 165 countries from 2005 to 2022
- Performed Principal Component Analysis (PCA) on the World Happiness Report dataset to reduce dimensionality and extract latent variables
- From the analysis, found that GDP per capita was the most positively correlated with a country's happiness

NBA Data Analysis, UCSB, Santa Barbara January 2023-March 2023

- Conducted data analysis using official data from the National Basketball Association
- Filtered the dataset so it only contained relevant information about each player's shot information
- Created shot-chart scatterplots for multiple players, including Stephen Curry and Joel Embiid
- Binned and smoothed Curry's shot data, visualized the smoothed shot data, then vectorized the data
- Computed the non-negative matrix factorization (NMF) of all player's shot charts and visualized shot basis images
- Created a heatmap to compare the distance between pairs of unique player coefficients from NMF

Election Prediction, UCSB, Santa Barbara September 2022-December 2022

- Collaborated with two others to develop a machine learning model to predict the election outcome using the 2020 U.S. county-level presidential election results and the 2017 U.S. county-level census data
- Cleaned the datasets by removing rows with missing values and reformatting columns to be consistent across datasets; aggregated the datasets for relevant information and joined them
- Explored different machine learning techniques such as PCA, hierarchical clustering, linear discriminant analysis, logistic regression, linear regression, and random forests to train the model
- Analyzed and interpreted the model to add visualizations to communicate information found from each technique
- Oversaw the conjunction of the code and ensured that the final version ran smoothly

WORK EXPERIENCE

Flex Associate, Amazon Fresh, Porter Ranch, CA November 2020-February 2022

- Utilized order-processing software to fulfill and organize online orders
- Interacted with zone leads regularly about problems to minimize miscommunication and develop stronger relationships

Private Tutor, Porter Ranch, CA August 2020-June 2021

- Tutored multiple high school students taking AP Computer Science by helping them with tasks such as determining code output and writing more efficient programs
- Outlined study patterns for students to ensure their comprehension of all course material, resulting in increases in assignment and test grades by 20%

SKILLS

- Experience with Python, Spark, R, SQL, Google Cloud Platform, SAS, C++, Java, and Excel
- Proficient in high-level mathematical concepts, including calculus, applied statistics, and linear algebra