Nathen Khaleghi

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Education

University of Houston, College of Natural Sciences and Mathematics — Houston, Tx
Bachelor of Computer Science w/ minor in Mathematics — *May 2025*
- **Overall GPA:** 3.2/4.0
- **Relevant Coursework:** Data Science I & II, Statistics for Sciences, Discrete Math, Programming & Data Structures, Algorithms & Data Structures, Graph Theory w/ Applications, Principles of Macroeconomics, Principles of Financial Accounting, Business Principles

Professional Experience

University of Houston Law Center — Houston, Tx
Student Worker/Technician — *July 2022 – Present*
- Digitally managing and organizing files, documents, and other records, ensuring secure and efficient data storage and retrieval.
- Overseeing data management, including compiling, updating, and maintaining records using various software tools to enhance data accessibility and security.
- Implementing and maintaining digital solutions for administrative tasks, streamlining processes, and improving efficiency.

Coding Experience

Full Stack Development - ConnectCoogs — *January 2024 – Present*
- Designed and developed ConnectCoogs, a full stack video chat platform intended solely for University of Houston students.
- Engineered the entire platform, including the homepage, sign-up page, login page, and main page where the video connections are accessible.
- Implemented email authentication with CougarNet email to verify user identity as students.
- Utilized HTML, JavaScript, Node.js, NPM, Socket.io, WebRTC, CSS, PHP, SQL, and JSON, among other technologies, to build and deploy the application.
- Ensured seamless real-time communication and video connectivity through WebRTC and Socket.io.
- Managed both frontend and backend development, ensuring robust functionality and user experience.

Data Science & Development – Customer Segmentation and Marketing Optimization — *July 2024 – August 2024*
- Conducted comprehensive customer segmentation to identify distinct customer groups and their purchasing behaviors using python.
- Implemented linear (random forest) and logistic regression models to predict customer behavior and potential outcomes.
- Applied clustering techniques to segment customers based on purchasing history and demographics.
- Developed predictive models to forecast customer lifetime value (CLV) and churn rates utilizing advanced machine learning techniques.
- Utilized visualization tools such as Matplotlib, Seaborn, and Tableau to present findings and recommendations to stakeholders.
- Conducted in-depth analysis to enhance customer retention strategies and optimize personalized marketing efforts.

Data Science & Development – Financial Asset Clustering and Strategy Development — *July 2024 – August 2024*
- Conducted clustering analysis on financial assets to identify distinct groups based on returns, volatility, and moving averages.
- Utilized variance inflation factor (VIF) to remove multicollinearity and ensure robust feature selection.
- Developed a neural network model using TensorFlow and Keras to classify assets with an accuracy of 96%.
- Implemented regularization techniques and early stopping to prevent overfitting and enhance model generalization.
- Engineered new features including returns, volatility, and moving averages for each asset.
- Developed investment, marketing, and product development strategies tailored to each asset cluster.
- Visualized the clustering results and feature importance using Matplotlib and Seaborn to provide actionable insights.
- Utilized Python, Pandas, NumPy, scikit-learn, TensorFlow, and Keras for data analysis, preprocessing, and model development.

Data Science & Development – Algorithmic Trading Bot — *July 2024 – August 2024*
- Developed an algorithmic trading bot to automate stock trading using historical and real-time market data.
- Utilized Python, Pandas, NumPy, and scikit-learn for data analysis, preprocessing, and model development.
- Implemented machine learning algorithms to predict stock price movements and optimize trading strategies.
- Integrated Alpaca API for executing trades based on the model's predictions.
- Conducted back testing to evaluate the performance of the trading strategies, ensuring robust and reliable results.
- Visualized trading performances and model accuracy using Matplotlib and Seaborn

Leadership and Affiliations

Sigma Alpha Epsilon Fraternity - Treasurer — *January 2022 – December 2022*
- Managed roughly a $50,000 semester budget for both Spring and Fall semesters for a 50-member fraternity. This included disbursing of funds to pay for bills or invoices, keeping records of collections and disbursements, and ensuring accounts are balanced.
- Thoroughly learned and implemented an entirely new financial management system within the fraternity to help streamline financial operations.

Skills & Interests

Coding Languages: Python, C++, JavaScript, SQL, R, HTML, CSS, PHP
Frameworks & Libraries: Node.js, NPM, Socket.io, WebRTC, Pandas, NumPy, scikit-learn, Matplotlib, Seaborn, Tableau
Application Proficiency: Microsoft Suite (Excel, PowerPoint, Word), Visual Studios, Git, Jupyter Notebook
Data Science techniques: Data cleaning and Preprocessing, EDA, Linear & Logistic Regression, Clustering (K-means, hierarchical), Machine Learning (decision trees, random forests, SVM), Model Evaluation & Cross Validation, Data Visualization & Advanced Plotting