Ethan Vaz Falcao

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EDUCATION

Worcester Polytechnic Institute

Bachelor of Science in Data Science & Mathematical Sciences *2024.05*

Minor in Computer Science

Relevant Coursework: Machine Learning, Algorithms, Principles of Real Analysis, Linear Algebra, Combinatorics, Probability Theory, Mathematical Statistics, Artificial Intelligence, Big Data, Business Intelligence

Awards: Pi Mu Epsilon (U.S. Mathematics Honors Society) Admitted: 2023.04

EXPERIENCE

Schneider Electric Boston, MA

Data Science Intern *2023.06 - 2023.09*

- Constructed a predictive model using Python (PySpark) and random forest regression for quantitative analysis, achieving 91% accuracy in forecasting battery percentages for a UPS Phase 1 sensor.
- Uncovered insights into UPS battery aging patterns over time, battery chemistry, and energy conservation aspects.

United Solutions Leominster, MA

Business Analytics Intern *2022.06 - 2022.09*

- Designed and implemented Power BI dashboards with dynamic DAX formulas, reducing report generation time by 30% and enhancing data visualization. This improvement facilitated quicker and more informed decision-making based on key trends.
- Implemented daily IQMS Reports using Excel, reducing report generation time and providing critical insights into labor productivity trends.

Clora Boston, MA

Business Analytics Intern *2021.06 - 2022.08*

- Conducted detailed payroll analysis for 100+ healthcare consultants, ensuring 100% accuracy and complete contract compliance.
- Developed and presented monthly operational and financial reports, identifying cost-saving opportunities that led to a 5% reduction in budget expenses.

PROJECTS

Optimizing Crypto Options Models

github.com/EthanFalcao/Optimizing-Options-Models-Crypto *2024.01*

- Developed Bitcoin and Ethereum options models by extracting 12 months of future data from the Deribit API; improved accuracy by 15% through adapting the Black-Scholes model to crypto's unique volatility.

Sentiment Analysis in Financial Markets

github.com/EthanFalcao/Sentiment-Analysis-in-Financial-Markets *2024.01*

- Utilized NLP techniques, including sentiment analysis and topic modeling, to analyze 10,000+ web-scraped CNBC financial articles, achieving a model accuracy of 85% in predicting stock trends from market sentiment.

Full Stack - Spotify Recommendation Algorithm

github.com/EthanFalcao/Spotify_Reccommendation_Algorithm *2023.09*

- Developed a playlist recommendation algorithm using extracted song data from the Spotify API(Spotipy). Utilized random forest algorithms and cosine similarity to create personalized playlist recommendations based on the user-input playlist, with an 90% accuracy.

Yelp Dataset Challenge: Detecting Fraud reviews and Business Attributes

ethanfalcao.github.io/Yelp_dataset_Challenge *2023.05*

- Predicted business attributes with 86% accuracy, offering insights into business profiles. Implemented fraud detection, flagging 20% of fake reviews for enhanced data integrity.

LEADERSHIP

Data Science Club Treasurer Worcester, MA

Worcester Polytechnic Institute *2023.01 - Present*

- Managed the club's annual budget, directly contributing to a 100% increase in club attendance.
- Conducted collaborative workshops with industry partners, to help students improve resumes and network

SKILLS

- **Languages** - Python (PySpark, Pandas, Matplotlib, Seaborn, Sklearn, Tensorflow, Or-tools), R, SQL, Java, MATLAB
- **Analysis Techniques** - Logistic Regressions, Decision Trees, Random Forests, Cosine Similarity, Data Pipelines
- **Tools** - VSCode, Databricks, Power BI, Kaggle, Jupyter, PyCharm, RStudio, Azure, Salesforce, Excel, Git