

Ethan Vaz Falcao

Greater Boston

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EXPERIENCE

Graph Mining (Senior Capstone)

Worcester, MA

Data Analyst

[Link](#) | 09/2023 - 05/2024

- Developed an algorithm to label the status of 1,000+ GitHub repositories, significantly reducing categorization hours.
- Analyzed GitHub repo commit trends showing inactivity shifts; developed a Power BI dashboard for insights.

Schneider Electric

Boston, MA

Data Science Intern

06/2023 - 09/2023

- Built a predictive model with PySpark and Random Forest, achieving 91% accuracy in forecasting UPS battery percentages.
- Analyzed battery aging and chemistry data to uncover insights into energy conservation strategies and improvements.

United Solutions

Leominster, MA

Data Analyst Intern

06/2022 - 09/2022

- Generated Power BI dashboards to reduce report generation time by 30%, enhancing data-driven decision-making.
- Automated daily labor productivity reports in Excel, cutting time and offering insights into labor productivity.

Clora

Boston, MA

Business Analytics Intern

06/2021 - 08/2022

- Analyzed payroll data for 100+ healthcare consultants, ensuring 100% accuracy and contract compliance.
- Produced monthly financial reports, identifying cost-saving opportunities, leading to a 5% budget reduction.

PROJECTS

DOW-30 Portfolio Optimization and Risk Analysis | *yfinance, ARIMA, XGBoost, LSTM*

[Link](#) | 06/2024

- Led a team to build ML models (LSTM, XGBoost) for optimizing Dow-30 portfolio allocations, reducing RMSE by 15%, and enhancing returns by 20% through mean-variance optimization, outperforming the S&P 500 benchmark.

Sentiment Analysis in Financial Markets | *ApifyClient, yfinance, BERT, Scikit-learn*

[Link](#) | 04/2024

- Integrated NLP techniques to analyze sentiment scores from 10,000+ CNBC articles with stock price movements; implemented Linear Regression and XGBRegressor models, achieving 79.22% explained variance in stock price changes, MAE of 0.5568, and MSE of 0.9353

Spotify Playlist Recommendation Algorithm | *Spotipy API, Random Forest, LightGBM, Pipelines*

[Link](#) | 11/2023

- Developed a playlist recommendation algorithm using extracted song data from Spotify's API (Spotipy), combining random forest algorithms and cosine similarity to personalize suggestions, achieving 90% accuracy in recommendations.

LEADERSHIP

Machine Learning Engineer

Worcester, MA

WPI Investment Association

04/2024 - Present

- Lead a summer project timeline, ensuring detailed planning and team collaboration, and selected optimization models tailored to investment strategies, resulting in a significant increase in portfolio efficiency and project success.

Treasurer

Worcester, MA

WPI Data Science Club

01/2023 - 01/2024

- Managed the club's annual budget, ensuring accurate fund allocation, and conducted workshops with industry partners on career development, directly contributing to a 100% increase in attendance and enhanced networking opportunities.

IT Volunteer

Worcester, MA

Catholic Charities

06/2022 - 09/2022

- Managed and co-directed the database migration to Salesforce, ensuring data integrity, and performed critical repairs on computer hardware and software systems, improving functionality and system reliability for the organization.

SKILLS

- **Languages** - Python (PySpark, Pandas, Seaborn, Sklearn, Pytorch, Cuda, Or-tools), SQL, R
- **Tools/Techniques** - VSCode, Databricks, Jupyter, Azure, Excel, Git, Hugging Face, Tableau, Deep Learning
- **Interests** - Basketball, Badminton, Weightlifting, Running, Photography, Video editing, Cryptocurrency

EDUCATION

Worcester Polytechnic Institute

B.S. Data Science, B.S. Mathematical Sciences

08/2020 - 05/2024

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

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

Admitted: 04/2023

Exams/Certifications: AWS certified cloud practitioner | P-Exam (Exp. August 2024) | CFA Level I (Exp. November 2024)