Ethan Vaz Falcao

Greater Boston

508-808-3510
Ethan.falcao@gmail.com
ethanfalcao.github.io/
github.com/ethanfalcao/
linkedin.com/in/ethan-falcao/

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 | *yApifyClient, 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 | *ySpotipy 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

Project Manager   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, Principles of 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: P-Exam (Expected August 2024) | CFA Level I (Expected November 2024)