Ethan Vaz Falcao

Greater Boston

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EXPERIENCE

Schneider Electric   Boston, MA
Data Science Intern   *06/2023 - 08/2023*
- 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 - 08/2022*
- Developed 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.
- Developed monthly financial reports, identifying cost-saving opportunities, leading to a 5% budget reduction.

PROJECTS

Dow-30 Portfolio Optimization and Risk Analysis | *yfinance, XGBoost, LSTM*   Link | *06/2024*
- Led a team to develop 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.

Optimizing Crypto Options Models | *Black-Scholes model, Deribit API*   Link | *05/2024*
- Developed and enhanced BTC European options models by adapting the Black-Scholes model for crypto's unique volatility using the Deribit API, incorporating stochastic volatility and Monte Carlo simulation, resulting in a 15% improvement in pricing accuracy compared to the Black-Scholes model.

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 .

LEADERSHIP

Project Manager   Worcester, MA
WPI Investment Association   *04/2024 - Present*
- Lead and coordinated a summer project timeline, ensuring seamless team collaboration for successful execution.
- Facilitated the selection of appropriate optimization models, ensuring maximum portfolio efficiency.

Treasurer   Worcester, MA
WPI Data Science Club   *01/2023 - 01/2024*
- 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

IT Volunteer   Worcester, MA
Catholic Charities   *06/2022 - 09/2022*
- Managed and co-directed the database migration to Salesforce, ensuring data integrity.
- Systematically maintained and performed critical repairs on various computer hardware and software.

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)