

# Ethan Vaz Falcao

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## EDUCATION

### Worcester Polytechnic Institute

*Bachelor of Science in Data Science & Mathematical Sciences*

*May 2024*

Minored in Computer Science

**Relevant Coursework:** Machine Learning, Algorithms, Object-Oriented Programming, Modeling and Data Analytics, Data Analytics and Statistical Learning, Principles of Real Analysis, Linear Algebra, Combinatorics, Probability Theory, Mathematical Statistics

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

Admitted: April 2023

## EXPERIENCE

### Schneider Electric

Boston, MA

*Data Science Intern*

*2023.06 - 2023.09*

- Constructed a predictive machine learning model using PySpark and random forest regression to forecast battery percentages for a UPS Phase 1 sensor, achieving an accuracy of 91 percent.
- 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*

- Developed Power BI dashboards with dynamic DAX formulas that reduced report generation time and improved data visualization, enabling more informed decision-making based on key trends.
- Implemented daily IQMS Reports using Python, reducing report generation time and providing critical insights into labor productivity trends.

### Clora

Boston, MA

*Business Analytics Intern*

*2021.06 - 2022.08*

- Analyzed payroll administration of healthcare consultants and ensured accuracy and completeness of their contracts.
- Prepared monthly operational and financial reports that were used to improve budgeting efficiency.

## PROJECTS

### Full Stack - Spotify Recommendation Algorithm

[https://github.com/EthanFalcao/Spotify\\_Recommendation\\_Algorithm](https://github.com/EthanFalcao/Spotify_Recommendation_Algorithm)

*2023.09*

- Developed a playlist recommendation algorithm using extracted song data from the Spotify API. Utilized random forest algorithms and cosine similarity to create personalized playlist recommendations based on user-input playlist.

### Yelp Dataset Challenge: Detecting Fake reviews and Business Attributes

[https://ethanfalcao.github.io/Yelp\\_dataset\\_Challenge.html](https://ethanfalcao.github.io/Yelp_dataset_Challenge.html)

*2023.05*

- Predicted business attributes and identified fake reviews using machine learning techniques applied to the Yelp dataset.

### Finding the Most Optimal NBA team for the 2022-23 Season

[https://ethanfalcao.github.io/nba\\_team.html](https://ethanfalcao.github.io/nba_team.html)

*2023.09*

- Created a Linear Optimization Model, using Python-Pandas and Google's or-tools Linear-Solver, to output the most optimal NBA Team for the upcoming '22-'23 NBA Season.

## LEADERSHIP

### Data Science Club Treasure

Worcester, MA

*WPI*

*2023.01 - Present*

- Informed the exec board of all the financial activities.
- Implemented a new record-keeping system that improved transparency and accuracy of financial transactions.

### IT Volunteer

Worcester, MA

*Catholic Charities*

*2022.06 - 2022.09*

- Managed and executed the database migration to Salesforce.
- Maintained and repaired hardware and software.

## SKILLS

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