**Brian Frechette**

West Hartford, CT 06119

brianfrechette1@yahoo.com | (603) 718-2765

[www.brianfrechette.me](http://www.brianfrechette.me) | [www.linkedin.com/in/brian-frechette](http://www.linkedin.com/in/brian-frechette) | [www.github.com/brianfrechette3](http://www.github.com/brianfrechette3)

**EDUCATION**

**University of Pennsylvania –** *Master of Science in Artificial Intelligence* **Online / Philadelphia, PA**

Relevant coursework: *Deep Learning, Natural Language Processing (NLP), GPU Programming, ML Jan 2025* *– TBD*

**University of Pennsylvania –** *Master of Science in Computer Information Technology* **Online / Philadelphia, PA**

Relevant coursework: *Software Design, Data Structures, Algorithms, Analytics, Data Science, ML, AI Aug 2022* *– May 2024*

Cumulative GPA*: 4.00/4.00*

**University of Connecticut –** *Bachelor of Science in Engineering* **Storrs, CT**

Major:*Mechanical Engineering Aug 2017* *– May 2021*

Cumulative GPA: *3.85/4.00*

Honors: *cum laude*

**WORK EXPERIENCE**

**Raytheon Technologies (RTX) - Pratt & Whitney East Hartford, CT**

*Senior Analytics Engineer May 2024 – Present*

* Serving as technical lead in a cross-functional project harmonizing several enterprise tools into central platform to decrease tool fragmentation, increase tool scalability, and provide a single source of truth for data outputs

*Analytics Engineer II Jun 2023 – May 2024*

* Trained a random forest machine learning model to predict engine shop visit cost with 90% accuracy for use in maximizing revenue over engine contract
* Refactored app’s ETL process to reduce runtime by 98% by identifying and replacing inefficient Python code with SQL
* Performed engine failure time analysis by fitting field data to Weibull probability distributions to assess engine design improvements relative to their expectation

*Analytics Engineer I Oct 2022 – Jun 2023*

* Developed analytic to recommend cost-optimized engine work scopes to maintenance engineers by extracting current engine data, work scope benefit estimates, and engine life requirements
* Automated process to generate and email engine data report to maintenance engineers when an engine needs maintenance, providing an estimated time savings of 5 hours per engine event
* Leveraged full-stack software development via Agile, Git, and Django (Python, JavaScript, HTML, ORM) to deploy Python / SQL based analytics, using common data libraries (NumPy, pandas, scikit-learn, SciPy, Matplotlib, seaborn)

**Triumph Group, Inc. West Hartford, CT**

*Systems Engineer II May 2021 – Oct 2022*

* Developed thermal system models using Engineering Equation Solver (EES) to design and analyze legacy and prototype environmental control systems (ECS) in response to new business requests (RFP, RFQ, RFI)
* Wrangled performance analysis data and generated relevant data visualizations to highlight stakeholders’ key interests
* Communicated with external stakeholders to clarify requirements and present current status and final output

**PROJECTS & ONLINE COURSES**

**Machine Learning Project – Predicting Mortality Rate Personal Project – Kaggle**

*Country Health Nutrition and Population Dataset. April 2024*

* Performed exploratory data analysis (EDA) to examine data format, data quality, and available features using pandas library
* Cleaned dataset by imputation, normalization, and use of PCA to address multicollinearity and/or overfitting in the dataset
* Explored basic linear regression models and regularization techniques (ridge and lasso) for predicting mortality rate
* Built several iterations of random forest regressor models using hyperparameter tuning with randomized and grid cross validation search to ultimately achieve an R2 score of 0.99 (maximum score is 1.0) and RMSE of 12 deaths per 1000 people

**TECHNICAL SKILLS**

Python, Django, pandas, Spark, sklearn, Matplotlib, SQL, Java, JavaScript, HTML, C, Git, Azure, DataBricks, Github, Agile, Scrum