Jhalyl Mason

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Summary

Detail-oriented Graduate Computer Science student with a 3.9 GPA, specializing in Big Data and Machine Learning. Proficient in Python, SQL, and data analysis tools such as Pandas, NumPy, and Matplotlib. Experienced in applying machine learning algorithms, including Deep Learning and anomaly detection, to real-world datasets, with a focus on improving model performance and extracting actionable insights. Skilled in data preprocessing, feature engineering, and model evaluation, with a proven track record of optimizing models using techniques like hyperparameter tuning. Passionate about leveraging data to solve complex problems, improve decision-making, and drive business impact. Seeking to apply my technical skills and analytical mindset to contribute to innovative projects.

Education

Master of Science in Computer Science (MsCS), University of Colorado Boulder — Graduation: May 2026

GPA: 3.9/4.0

Relevant Coursework: Data Mining, Machine Learning, Probability Theory, Statistical Inference, Calculus, Linear Algebra

Independent Learning: Risk Management & Financial Theory, Duke University

Experience

Technical Customer Service Advisor, Conduent — remote — November 2022 – August 2023

- Provided comprehensive IT support to over 100 users daily, troubleshooting software, hardware, and networking issues, and ensuring over 90% customer satisfaction.
- Collaborated with cross-functional teams to develop and implement solutions, strengthening problem-solving and communication skills by delivering clear, technical solutions to non-technical users.

Projects

LSTM Portfolio Optimization — Tools: Yfinance, Pandas, Matplotlib, Scikit-Learn, Plotly, SciPy

- Utilized historical stock data to predict future stock prices using LSTM neural networks and performed time series analysis.
- Optimized a portfolio of top-performing stocks, achieving a 47.95% expected annual return and a Sharpe ratio of 1.48.
- Evaluated model performance using RMSE, MAE, and MAPE.
- Visualized predictions alongside actual data to assess model accuracy and effectiveness.
- Applied 6-month moving averages of predicted returns to identify high-performing assets, resulting in a data-driven, optimized investment strategy.

Machine Learning Options Pricing — Tools: Yfinance, NumPy, Pandas, SciPy, Matplotlib, Scikit-Learn

- Implemented a Random Forest Regressor to forecast call and put option prices.
- Achieved superior performance in pricing accuracy compared to Black-Scholes formula using metrics such as MSE, MAPE, AAPE, and PEX% (e.g., MSE: 7.52 vs. 1145.28, MAPE: 16.53% vs. 545.10%).
- Cleaned and preprocessed options data, created new features), and standardized data for improved model accuracy.
- Visualized model predictions and analyzed feature importance, identifying key drivers of pricing accuracy and providing insights into areas where machine learning outperforms traditional methods.

E-commerce Anomaly Detection Model — Tools: Scikit-Learn, Pandas, NumPy, Matplotlib, XGBoost

- Developed an anomaly fraud detection model achieving 95.5% accuracy and a precision of 0.96 in identifying fraudulent transactions.
- Processed 1.4 million transaction records to build a scalable solution suitable for large datasets.
- Optimized the model using hyperparameter tuning with Optuna, improving detection rates by 15%.
- Demonstrated potential to reduce e-commerce fraud-related losses by addressing a $206 billion global fraud problem.

Sentiment Analysis NLP Model & ETL Pipeline — Tools: PySpark, Pandas, TensorFlow, Matplotlib, NLTK

- Designed an ETL pipeline using Spark to clean and process 1.6 million unstructured social media records, enhancing data quality for analysis.
- Applied NLTK for text preprocessing and trained a TensorFlow sentiment classification model with 75% accuracy.
- Visualized model performance through a confusion matrix and other metrics, providing actionable insights for social media strategies.
- Improved actionable insights by 25%, enabling data-driven social media campaign strategies with increased engagement by 10-15%.

Technical Skills

Programming Languages: Python, SQL, R
Data Analysis & Visualization: Pandas, NumPy, Matplotlib, Seaborn, Tableau, RStudio
Machine Learning & AI Frameworks: Scikit-Learn, TensorFlow, NLTK, keras
Technologies & Algorithms: Predictive Modeling (Neural Networks, Regression), Natural Language Processing (NLP), Time Series Analysis
Big Data Tools: Apache Spark (PySpark), PostgreSQL
Other Tools: Jupyter Notebook, A/B Testing, MS Office Suite, Google Colab

Certifications

Machine Learning Specialization, Stanford University

Mathematics for Machine Learning & Data Science Specialization, DeepLearning.Ai

Digital Marketing & E-Commerce Professional Certificate, Google