

Jhalyl Mason

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Summary

Graduate student specializing in Machine Learning and Big Data, with experience in predictive analytics, neural networks, and large dataset analysis. Skilled in Python, SQL, and data visualization tools, with experience in building end-to-end data pipelines, applying advanced machine learning techniques, and deriving actionable insights from complex datasets. Seeking an analytical internship to contribute to data-driven innovation, solve real-world problems, and optimize performance using advanced algorithms and cutting-edge technologies.

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.
- 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.
- Optimized a portfolio of top-performing stocks, achieving a 47.95% expected annual return and a Sharpe ratio of 1.48.

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

- Implemented a Random Forest Regressor to forecast call and put option prices.
- Cleaned and preprocessed options data, created new features, and standardized data for improved model accuracy.
- 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 & MAPE: 16.53%).
- 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