Jhalyl Mason

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Education

University of Colorado Boulder Boulder, CO
Master of Science in Computer Science *August 2024 – 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

Technical Skills

Languages: Python, SQL (Postgres), R
Technologies & Algorithms: Predictive Modeling (Neural Networks, Regression), Natural Language Processing (NLP), Time Series Analysis
Data Analysis & Visualization: Pandas, NumPy, Matplotlib, Seaborn, Tableau, RStudio
Other Tools: Jupyter Notebook, A/B Testing, MS Office Suite, Google Colab

Experience

Independent Writer *April 2024 – Present*
Medium
- Researched and authored articles on **machine learning, data science, and quantitative finance**, covering both theoretical concepts and real-world applications.
- Explained foundational ML techniques such as **linear regression, neural network architectures, and time series analysis** in an accessible manner.
- Communicated complex mathematical and statistical concepts related to **probability, stochastic processes, and optimization** for a technical audience.

Technical Customer Service Advisor *November 2022 – August 2023*
Conduent *Remote*
- 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

Adaptive Volatility Stop Loss Model | *QuantConnect, Pandas, statsmodels*
- **Researched** the viability of **Markov Switching Models** for regime detection and risk management.
- **Developed** a dynamic trading strategy that adjusts stop-loss levels based on detected high/low volatility regimes, and backtested using **Apple inc** stock as a case study.
- **Achieved robust performance metrics** (Sharpe ratio of 1.09, annual return of 34.73%, profit-loss ratio of 1.25) demonstrating the potential of volatility-adaptive risk strategies.

LSTM Portfolio Optimization | *Yfinance, Pandas, Scikit-Learn, Plotly, SciPy*
- Utilized historical stock data with LSTM neural networks for **time series forecasting**.
- Evaluated model performance using RMSE, MAE, and MAPE.
- **Optimized** financial portfolio using MVO, achieving a Sharpe ratio of 1.48.

Machine Learning Options Pricing | *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.
- **Visualized** model predictions and analyzed feature importance, identifying key drivers of pricing accuracy.

Certifications

Machine Learning Specialization, Stanford University
Mathematics for Machine Learning & Data Science Specialization, DeepLearning.Ai
Digital Marketing & E-Commerce Professional Certificate, Google