DOAN NGUYEN TRI

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SUMMARY

Final-year Data Science student specializing in quantitative finance and financial data analysis. Experienced in building data pipelines, backtesting trading strategies, and applying machine learning models (Linear Regression, Random Forest) to improve prediction accuracy in the stock market. Proficient in Python (Pandas, NumPy, Scikit-learn), SQL, and data modeling. Strong independent analytical mindset, passionate about extracting insights from historical data to develop and optimize quantitative investment strategies.

EDUCATION

Bachelor of Data Science - Financial Analyst **Expected Graduation: September 2026**

- Concentration: Quantitative Finance & Financial Econometrics
- Key Coursework & Application:
  - Derivatives & Investment Analysis: Studied core concepts of equity derivatives (options, futures) and Modern Portfolio Theory (MPT). Applied quantitative models such as CAPM and Monte Carlo Simulation to develop the QuantFolio portfolio optimization project and evaluate portfolio risk–return performance.
  - Time Series Analysis & Econometrics: Applied statistical and time-series techniques to analyze financial datasets, including rolling correlation analysis and divergence detection in the FX Macro-Dynamics (USD/VND) project.
  - Machine Learning & Predictive Analytics: Developed predictive models for credit risk assessment, focusing on model validation, predictive performance, and supporting data-driven decision making.

PROJECTS

US Stock Portfolio Optimization (QuantFolio)
Role: Quantitative Researcher
Tech Stack: Python (NumPy, SciPy), CAPM, Monte Carlo.

- Developed an automated portfolio optimization engine using Modern Portfolio Theory (MPT) to construct risk-efficient portfolios from major US Tech stocks (AAPL, MSFT, NVDA).
- Applied Linear Regression (CAPM) to calculate Beta (β) coefficients, assessing systematic risk relative to the S&P 500 benchmark,.
- Executed Monte Carlo Simulations (10,000 runs) to generate the Efficient Frontier and identify the optimal portfolio allocation with the highest Sharpe Ratio,.
- Conducted Backtesting: Validated the optimized model against historical market data (2023-Present), demonstrating superior returns compared to the SPY ETF benchmark,.

FX Macro-Dynamics & Idiosyncratic Risk Analysis
Role: Data Analyst
Tech Stack: Python (Pandas, Seaborn), Rolling Statistics.

- Analyzed currency drivers for the USD/VND exchange rate to decouple global impacts (DXY Index) from domestic idiosyncratic risks (SBV Policy, Liquidity).
- Processed Time-Series Data: Normalized disparate datasets to a "Base 100" scale for relative performance comparison over a 2-year horizon.
- Implemented Rolling Correlation Analysis (60-day window) to detect "Divergence Zones" – periods where VND decoupling from global trends signaled shifts in monetary policy regimes,.
- Visualized Market Regimes: Built dual-axis dashboards using Matplotlib/Seaborn to present quantitative insights on currency volatility and trend capability.

Equity Research Assistant Toolkit (Vietnam & Global Markets)
Role: Equity Research Analyst (Personal Project)
Tech Stack: Python (vnstock3, yfinance, Pandas, NumPy, Matplotlib, Seaborn), Rolling Statistics.

- Built a research-oriented toolkit to support equity analysis and financial report preparation by automating market data collection for both Vietnam (vnstock3) and global markets (Yahoo Finance).
- Designed a unified workflow to retrieve stock and benchmark index prices, enabling consistent performance comparison and market monitoring.
- Implemented key risk and performance metrics including annualized volatility, Beta, maximum drawdown, 52-week high/low, and total return for research reporting.
- Integrated fundamental data modules (balance sheet, income statement, cash flow, and financial ratios) for Vietnam stocks to support company analysis and valuation work.
- Structured the project as an analyst support tool focused on research productivity and data reliability rather than trading or price prediction.

TECHNICAL SKILLS

- **Data Analysis & Programming:**
  - Python (Advanced): Pandas, NumPy (Data Processing & Analysis), SciPy (Statistical Analysis), Matplotlib, Seaborn (Data Visualization).
  - SQL: Complex querying, data cleaning, and extraction for structured and time-series datasets.
- **Data Visualization & Dashboard:**
  - Power BI: Dashboard development, KPI monitoring, and data visualization for performance tracking.
  - Python Visualization: Matplotlib, Seaborn for analytical reporting.
- **Statistical Modeling & Analytics:**
  - Models: CAPM, Linear Regression, Modern Portfolio Theory (Efficient Frontier).
  - Analytical Methods: Time-series analysis, Monte Carlo Simulation, Rolling Correlation Analysis.
  - Metrics: Sharpe Ratio, Volatility, Drawdown, Risk-adjusted performance analysis.
- **Tools & Data Sources:**
  - APIs: Yahoo Finance (yfinance) for financial data extraction.
  - Excel & VBA: Data processing and workflow automation.
- **Languages:**
  English: Technical proficiency – able to research, understand, and implement models from English academic papers and documentation.