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Lucas Gay

Availability: Jan – Aug 2026

GitHub: lucascgay
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Education

Northeastern University **Sept 2022 - Dec 2026**
Khoury College of Computer Sciences *Boston, MA*
B.S. in Computer Science, Minor in Data Science GPA: 3.7

Relevant Coursework:
Financial Accounting, Financial Management, Foundations of Data Science (Pandas, scikit-learn, PyTorch, TensorFlow, Neural Networks), Discrete Mathematics, Math of Data Models (Linear Algebra, Machine Learning)

Skills

Technical Skills: Python, C++, SQL/NoSQL (MongoDB), R, Java, C, bash, Git/GitHub
Financial Software: Microsoft Office Suite, VBA, Salesforce, Power BI, Tableau, Bloomberg Terminal

Relevant Experiences

Saifr (Fidelity Labs, Fidelity Investments) **July 2025 - Present**
Business Analyst Co-op *Boston, MA*

- Contribute to the development and refinement of AI models supporting Anti-Money Laundering (AML) and Know Your Customer (KYC) compliance, with applications for financial institutions.
- Conduct data labeling, testing, and model tuning using Label Studio, internal tools, and Python-based scripts, improving model precision and operational efficiency.
- Analyze and assess large datasets for pattern recognition and risk evaluation, improving model decision-making in high-stakes regulatory contexts.

Commercetools **Jan - May 2025**
Corporate Development Co-op *Boston, MA*

- Developing and implementing predictive models to forecast customer behavior trends in Python, using PyTorch, scikit-learn, and SQL, to improve accuracy in trend analysis and decision-making.
- Conducting in-depth analysis of customer data across multiple business systems (e.g., Platform Data, Salesforce, Netsuite, Gainsight, Jira) to identify actionable insights and opportunities.
- Analyzing complex datasets to derive key patterns and statistical insights, serving as the foundation for strategic presentations to C-level executives.

Northeastern Systematic Alpha **Sept 2023 - Present**
Quantitative Researcher *Boston, MA*

- Developed and implemented factor-based quantitative models to identify alpha by analyzing key financial metrics such as firm size, book-to-market ratios, and momentum factors using multifactor models.
- Performed rigorous factor analysis, evaluating predictive power through methods such as Spearman Rank Correlation and cumulative return analysis across different timeframes to ensure the robustness of trading algorithms.
- Utilized Fama-MacBeth regressions and other statistical techniques to build multifactor asset pricing models, which helped to identify and capture risk premia from various factor exposures.

Projects

Algorithmic Trading Bot (Python) **July 2024**

- Developed a quantitative algorithmic trading bot with the TradeStation API hosted on amazon lightsail to continuously and reliably executes trades in a live trading environment.
- Gained insights into risk management and the effects of volatility and liquidity on market behavior. Limited trade capital to 2% per position and adjusted sizes based on the volatility index, which reduced drawdown by 20%.
- Conducted backtesting with historical market data from the past 5 years, achieving a 44% win rate for executed trades.

AAA Rated Corporate Bonds Model (Python) **Nov 2023**

- Led an analysis to examine the influence of economic indicators (GDP, CPI, unemployment rate, and interest rate) on AAA rated corporate bond prices and successfully predicted movements over the next 4 months to 88% accuracy.
- Utilized a multiple polynomial regression model, achieving a significant R^2 value of 0.91, indicating that 91% of the price variance was effectively explained by the selected indicators.
- Ascertained the most influential factors using a random forest algorithm. Highlighted the critical role of GDP and CPI as predictors, while optimizing for model complexity to avoid overfitting.