Luke Marolda

maroldaluke@gmail.com | 609-477-2104

https://www.linkedin.com/in/luke-marolda-b629181ab/ https://github.com/maroldaluke https://maroldaluke.github.io/

EDUCATION

Carnegie Mellon University, Pittsburgh, PA *May 2024*

B.S. in Electrical & Computer Engineering with a minor in Computational Finance

- GPA: 3.81/4.00
- **Relevant Coursework**: Continuous Time Finance, Discrete Time Finance, Distributed Systems, Database Systems, Computational Partial Differential Equations, Deep Learning & Pattern Recognition, Mathematics of Fixed Income Markets, Signal Processing, Computer Systems, Probability Theory and Random Processes, Differential Equations, Introduction to Mathematical Finance, Principles of Software Construction, Concepts of Mathematics, Mathematical Foundations of Electrical Engineering, Calculus in Three Dimensions.
- **Carnegie Mellon Men's Soccer – Division III Soccer Athlete**
  Committed to 20 hours a week of daily practices, workouts, and traveling nationally for UAA. Awarded the 'Tartan Award' for outstanding contributions to the team for the Fall 2023 season. UAA All-Academic Team for all four years. Played soccer for roughly the past 16 years; significant accolades include: Two-year captain for Peddie School, Most Valuable Player Award 2019, All-Conference First Team, Mercer County Hall of Fame, All-Prep A First Team, All-Conference Academic First team, and Trentonian All-star team.

SPECIFICATIONS

Technical Skills

- Programming Languages & Tools: Python, KDB+/Q, Bloomberg Terminal, Java, C/C++, SQL, Object Oriented Programming, Git, PyTorch, Pandas, NumPy, Excel, Powerpoint.

Personal Interests: Quantitative finance, options, computer science, investing, cryptocurrencies & blockchain, soccer, poker, skiing, surfing, and music (rock/alternative).

WORK EXPERIENCE

Morgan Stanley – New York City, NY

IED Derivatives Analyst *July 2024-Present*

- Working as an equity derivatives trader on the Automated Market Making (AMM) desk. Core responsibilities include trading the health care sector, back-testing and implementing systematic solutions to address toxic trading flow, building reporting and infrastructure to better understand portfolio risk and PNL, and various operational tasks.
- Notable Projects
  - Implemented various back-testing frameworks to study options spread trading in low-liquidity names with pivotal upcoming catalyst events, create strategies to identify and limit trading against toxic counterparties, analyze the performance of delta positions in high short interest names, quantify PNL on overnight non-earnings events, and tune exchange risk mitigation settings.
  - Created tools to systematically identify upcoming biopharma catalysts by integrating data providers into the desk database pipeline, quantify and understand outsized trades in exposed securities, and manage book positioning into these events.
  - Enhanced reporting around portfolio-level risk, outsized options positions, daily sector PNL, and country/tariff exposure.
  - Developed various improvements to desk operations, including a contrary exercise/assignment scenarios report, script to analyze early exercise decisions, report to identify relevant pre-open news headlines, tool to aggregate portfolio beta exposure, and script to reconcile overnight position changes.

IED Derivatives Summer Analyst *June 2023-August 2023*

- Worked as an Institutional Equity Derivatives Trading and Structuring Summer Analyst. Rotated on the Exotics, Automated Market Making, Index Volatility, and Structuring desks.

Carnegie Mellon University – Pittsburgh, PA August 2023-October 2023

Teaching Assistant, Fixed Income 46-956

- Worked as a teaching assistant for the Master of Science in Computational Finance (MSCF) Fixed Income course. Responsibilities included holding office hours, grading homework and exams, and tutoring students in linear algebra, probability, calculus, and more.

J. Goldman & Co. – Remote *September 2022-February 2023*

Quantitative Strategies Intern

- Worked as a part-time fall intern for the NYC-based independent investment manager, J. Goldman & Co., under the Quantitative Strategies Team.

Apex Fintech Solutions – New York City, NY *May 2022-August 2022*

Developer Intern

- Worked as a software developer intern for the PEAK6 Subsidiary, Apex Fintech Solutions, under the Apex Silver Team. Primary responsibilities included designing and developing software solutions for client integrations with the Apex Silver Cost Basis product, as well as writing scripts for data processing and analysis.

GZM Group – Princeton, NJ *January 2020-May 2022*

Founder & Chief Executive Officer

- Founded and managed a digital marketing agency that provided affordable and analytical media marketing services and software to small businesses.

PERCH Lab at The University of Pennsylvania – Philadelphia, PA *June 2019-August 2019*

Research Assistant at Graduate Robotics Research Lab

- Spent 8 weeks as an intern among graduate students engaging in innovative HRI research. Developed own research project; worked to characterize a robotic differential shoulder mechanism with torque limits and singularities. Results were used for data analysis in the Quori Human Robot Interaction Project.

PROJECTS & ACTIVITIES

Random Access Mathfi *May 2023-June 2024*

- Developed a variety of mathematical finance-related tools, including a Geometric Brownian Motion stock modeler, an interactive Black-Scholes pricer, an implied volatility calculator, and more.

Mean-Reversion Trading Bot *June 2021-July 2021*

- Developed a fully automated trading bot which uses a mean-reversion investment strategy on equities with high volatility. The program queries live stock data through a WebSocket connection, uses the Durbin-Watson test for serial correlation to determine asset market conditions, and then finds and executes optimal trade entries and exits.

Princeton Fintech and Quant Trading Conference *August 2021-February 2023*

- Was a member of the executive organizing committee for one of the largest student and alumni-led conferences on quantitative finance in the country.

Personal Investing *January 2019-Present*

- Manage a personal fund to trade equity and cryptocurrency markets using various techniques to manage short- and long-term investments.