Luke Marolda

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA   *May 2024*
B.S. in Electrical & Computer Engineering with a minor in Computational Finance

- GPA: 3.83/4.00
- **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, Principles of Imperative Computation, Structure & Design of Digital Systems, Fundamentals of Computer Science, Principles of Microeconomics, Accounting, Physics I/II
- **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.
- **Academic Organizations**: Former Emerging Leaders Competition Winner; Active and engaged member of CMU's Math, Quant, and Blockchain clubs

SPECIFICATIONS

Technical Skills

- Programming Languages & Tools: Python, C/C++, Java, MATLAB, Object Oriented Programming, Git, PyTorch, Pandas, NumPy, SystemVerilog, LaTeX
- Additional Skills: CAD (Autodesk/Solidworks), Excel, Google Analytics, SEO, Powerpoint, Word, Adobe Premiere Pro, FL Studio 20, Social Media Advertising

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

WORK EXPERIENCE

Morgan Stanley – New York City, NY   *June 2023-Present*
Incoming IED Derivatives Analyst

- Will be returning to the Automated Market Making (AMM) desk, starting in June 2024.

IED Derivatives Summer Analyst

- 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, as well as 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 transitioning to the digital era. Daily operational tasks included creating social media advertising campaigns, developing and designing websites & social media pages, performing search engine optimization, and analyzing and automating data analytics to bring high return on investment for small to medium sized 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. Included experience with programming in Java with Robot Operating System, Solidworks CAD, MATLAB, circuit design, Arduino, and various other engineering skills.

The Beekman Group, LLC – New York City, NY   *June 2018-August 2018*
Summer Internship

- Worked at middle-market private equity firm with $1.0 billion AUM. Worked in company information management and completed data analysis projects.

PROJECTS

Random Access Mathfi   *May 2023-June 2023*

- 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 market conditions of a given asset, and then finds and executes optimal entries and exits for trades by generating overbought and oversold signals. Strategy can also be tested on historical price data to tweak and adjust model parameters.

EXTRACURRICULAR ACTIVITIES

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.