Hadrian Fratarcangeli

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Education

Master of Science Candidate: Applied Mathematics and Statistics, *Stony Brook University* — **Aug 2025 — Dec 2026**
Bachelor of Arts: Mathematics and Computer Science, *Hamilton College* — **Aug 2021 — May 2025**
Cumulative GPA: 3.77 | NESCAC All-Academic Football Team

Employment

AI Expert Trainer — **June 2025 — Present**
Data Annotation — *Remote*
- Generate coding prompts for Large Language Models (LLM's) coupled with codebases for testing model correctness, instruction following, and efficiency.
- Write solutions to coding prompts and evaluation reports for the LLM to learn from.

Informational Technology Intern — **May 2024 — Aug 2024**
Oppenheimer & Co. Inc. — *New York, NY*
- Developed and optimized backend endpoints for the financial advisor platform, enhancing system performance and user experience.
- Implemented unit tests to ensure the reliability and functionality of new and existing code.
- Wrote SQL queries to retrieve and analyze data from company databases, supporting backend development and ensuring data accuracy.
- Led winning intern team on an equity research project, analyzing market data to develop a diversified portfolio that we presented to a board of managing directors.

Computer Science Teaching Assistant — **Aug 2022 — May 2025**
Hamilton College — *Clinton, NY*
- Supported students in understanding and completing coding labs.
- Provided guidance on programming concepts, debugging, and problem-solving.

Client Success Intern — **May 2022 — Aug 2022, May 2023 — Aug 2023**
Predictive Success Corporation — *Whitby, Ontario, Canada*
- Established a client sales performance map in Excel to evaluate a sales department based on proprietary Predictive Success metrics.

Projects/Experience

Trading Engine — **June 2025 - Aug 2025**
- Designed and implemented a multi-asset trading engine simulator using Python, capable of applying multiple quantitative strategies to market data, executing trades, and rapid backtesting with ML-driven risk management.

LSTM-MLP Option Pricer — **July 2025**
- Developed a LSTM-MLP hybrid model using PyTorch to better forecast option value by integrating sequential and dense layers.

CUSUM Change Point Detection Algorithm — **July 2025**
- Created an interactive Streamlit application to detect change points in financial time series using CUSUM methodology with kernel-based and likelihood-based methods.

Psi Upsilon Undergraduate Endowment Committee — **Dec 2023 — May 2025**
- Served as a member on the student-led financial committee that manages the endowment of the fraternity.

NFL Big Data Bowl 2024 — **Nov 2023 — Jan 2024**
- In the NFL's annual competition, implemented machine learning techniques on frame-by-frame data in R to develop an influence metric for defensive players on each play.

Activities

Hamilton College Football, *Captain* — **Dec 2023 — Nov 2024**
Psi Upsilon Psi Chapter, *President* — **Jan 2024 — Dec 2024**

Skills

Tools and Languages — Python, C++, R, SQL, PyTorch, NumPy, Pandas, Git, Scikit-learn, Excel, LaTeX
Interpersonal — Leadership, Teamwork, Responsibility, Dependability, Flexibility