GREGORY COLONESCU

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EDUCATION

Lehigh University | M.S. in Financial Engineering | GRE: 331 — Aug 2023 – May 2025

- Relevant Coursework: *Financial Stochastic Analysis, Stochastic Calculus, Financial Optimization, Optimization Models and Applications, Optimization Methods in Machine Learning, Random Processes, Time Series (audit)*
- *Industrial & Systems Engineering 2024 Financial Engineering Master's Student of the Year*

The University of Texas at Austin | Mathematics, Finance — Aug 2019 – May 2023

- *Data Structures, Algorithms, Neural Networks, Predictive Analytics, Quant Investment Management, Differential Equations, Derivatives, Asset Pricing, Financial Volatility, International Macroeconomics (Econometrics)*
- *University Honors: Spring 2020 – Fall 2021*

CORPORATE SPONSORED QUANT PROJECTS

Machine Learning Interpretability: Buy/Hold/Sell Prediction Model — Aug 2023 – Present

Sponsor: Machine Learning book author and VP Quantitative Analytics, AI Quant at Barclays

- Planned long-term project for the group (from data collection to model creation to interpretation and retraining)
- Trained several individual random forest and knn models based on quarterly accounting statements and daily closing prices, delivering an interpretability/alpha correlation measure for the sponsor
- Found alpha loss is present in all models as interpretability grows, with 2.2% and .6% alpha loss for global models

Blockchain Compliance — Jun 2024 – Present

Sponsors: Inca Digital, DARPA, J.S. Held, and the Head of Quant Trading at Norrio Capital

- Worked to detect market manipulation and bad actor trading through mathematical means and on-chain analysis
- Constructed an algorithm to find sanction evading trades on USDT by Russian affiliated actors with 75% success rate

Third Party Litigation Financing Contract Pricing — Aug 2024 – Present

Sponsor: Attorney at McGuireWoods LLP

- Parsed through thousands of webscraped lawsuits and court opinions using an LLM and factor engineering
- Worked on mathematical models based on the development of the Black-Scholes-Merton model and the Altman Z-Score and machine learning models to price TPLF contracts with an average 70% correct prediction

Large Language Model Input Modification — Nov 2023 – Nov 2024

Sponsor: Global Head of Financial Solutions at MathWorks

- Developed knowledge graph for the LLM, improving ability to determine relationships within various inputs
- Produced vectorization algorithm for detecting article matching percentages with user input questions
- Tested use of AI agents to consolidate searching algorithm for various articles

EXPERIENCE

Edgewater Markets – Bethlehem, Pennsylvania — Dec 2024 – Present

Proprietary Currency Trader (Part-time)

- Traded $10-20 MM per day during the trading session in a high pressure environment
- Followed a proprietary model while still making personal decisions on which trades to take and when

Hilltop Holdings (Regional Financial Services Holding Company) – Dallas, Texas — Jun 2022 – Aug 2022

Quantitative Analytics Intern

- Conducted Peer Analysis at multiple firm levels and automated key steps, saving tens of hours per quarter
- Manipulated mortgage volume/interest rate risk models in R Studio and VS Code, helping transition to ARIMA

ING Bank – Bucharest, Romania — Jun 2021 – Jul 2021

IT/Software Intern

- Familiarized myself with BDD through Cucumber, PlantUML, VS Code, Docker, and Git
- Programmed and tested modules in a large Python3 project involving hundreds of thousands of daily transactions

SKILLS

Technical Stack: Python, R, Git Bash, LaTeX, SNP, Linux; Classroom proficiency: C, C++, Java, MATLAB, SQL

Interests: Board/Strategy Games, PC building, Squash, Current Events, Mentoring