# 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