NEIL MASCARENHAS

Applying to Financial Engineering Programs for Fall 2025

I am well versed in statistics, financial mathematics, and machine learning. I am applying to a master's in financial engineering program for Fall 2025 with the intention of doing research in quantitative finance. I will be applying for a PhD program in the future.

EDUCATION

2020 | 2024

University of Michigan
LSA and Ross School of Business — Ann Arbor

- B.S. in Mathematics of Finance and Risk Management
- B.A. in Data Science
- B.B.A. with specialization in Finance

PROFESSIONAL EXPERIENCE

2023

Quantitative Analyst, Intern
LifeSync Inc. — Coral Springs, FL

- Automated 15 reports paramount to the finance and accounting departments' monthly breakdown of accounts and sales using PowerBI.
- Learned modern accounting/finance practices and database management through cross-departmental collaboration to improve their current database structure.

2022

Quantitative Analyst, Intern
Yousif Capital Management — Bloomfield Hills, Michigan

- Implemented a machine learning model trained on over 1.5 million transactions to detect anomalies in real-time transactions and provide immediate feedback on potential typing/calculation errors using scikit-learn and Isolated Random Forest.
- Planned and implemented a large-scale web scraping algorithm to automate searching over 5000 keywords and rank new business opportunities with scrapy, ScraperAPI, and pandas.

2021

Quantitative Developer, Intern
Greenstone Farm Credit Services — East Lansing, Michigan

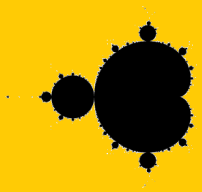
- Created a web scraping algorithm with Selenium to prepare and quality assure tax forms for 5000 clients, replacing the manual process while saving over 4,800 man-hours and approximately $100,000.
- Cleaned data using R Tidyverse, Regex, Python, and SQL and a plethora of creative solutions for address parsing, fuzzy matching, and zip code recognition for mapping to region/state/branches in Michigan.

LEADERSHIP EXPERIENCE

2021 | 2024

Quantitative Consulting and Finance Group
President, Founder, Project Lead — University of Michigan

- Implementing the SABR pricing model in C++ to construct a trading strategy based on mispricing of options in real-time.
- Implemented the Nelder-Mead algorithm for local constrained linear optimization necessary to minimize mean-squared error.
- Developing a forecasting model in Python for options based on the SABR pricing model and Monte Carlo simulations for underlying assets.
- Recruited and led over 30 members for 2 years, providing guidance for project teams and leading two project teams each semester.
- Developed trading strategy using network theory to draw industry lines with lead-lag relationships as a proxy with numpy, numba, and Wharton Research Data Services.



CONTACT INFO

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Personal Website With Writing Samples

SKILLS

Experienced in statistical analysis, machine learning, and financial mathematics.

Highly skilled in R, Python, LaTeX, and SQL.

Proficient in C++, Javascript, HTML, and Swift.

CLASSES

Mathematics of Finance, Applied Regression, Bayesian Data Analysis, Probability Theory, Data Mining, Data Structures and Algorithms, Honors Linear Algebra, Big Data in Finance, Discrete Math, Multivariable and Vector Calculus, Honors Differential Equations