Gregory Barco

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Education

The City University of New York, Brooklyn College GPA: 3+/4 — New York, NY
Bachelor of Science in Applied Mathematics, Minor in Financial Mathematics — *Expected May 2026*

- **Coursework:** Mathematical Statistics, Probability Theory, Financial Mathematics, Derivatives Pricing, Stochastic Differential Equations, Numerical Analysis, Real Analysis, Machine Learning

Experience & Research

Congressional Intern – Budget and Appropriations — Jan. 2024 – Apr. 2024
U.S. House of Representatives (Rep. Adriano Espaillat, NY-13) — *Washington, DC*

- Built Fiscal Year (FY) '23-'24 allocation database across 20 agency portfolios, analyzing $1.27T in federal budget to prepare budgeting forecasts for FY'25.
- Prepared strategic memoranda prioritizing $126.6M in community requests, contributing to **$10.9M in secured Dept. of Housing and Urban Development Community Project Funding**. View Table (Pg. 148) ↗
- Evaluated Basel III Endgame capital requirements and assessed constituent impacts on mortgage liquidity and credit availability to inform legislative vote recommendations.
- Executed geospatial statistical analysis across 255+ ZIP codes using R to identify and rank high-need community development zones for legislative strategy.
- Researched GAO reports on federal hate crime data and drafted Congressional correspondence requesting statistical disaggregation from the DOJ/FBI securing 13 bipartisan co-signatures. View Letter ↗
- Led and scheduled high-impact monetary meetings with C-suite executives, stakeholders, and community leaders.

Undergraduate Research Assistant – Financial Mathematics — Aug. 2024 – Present
CUNY Brooklyn College, Department of Mathematics — *Brooklyn, NY*

- Preparing novel research manuscript on Monte Carlo Simulation of regime-switching derivative asset pricing models with PhD faculty.
- Engineered high-performance stochastic price evolution using low-level memory management and parallel programming; Work in progress for regime estimation and walk-forward validation across historical data
- Programmed 20+ option pricing contracts (Vanilla, Asian, and Barrier) and statistical visualization to support real-time risk-return analysis.

Financial Assistant – Central Depository — Mar. 2023 – Present
CUNY Brooklyn College — *Brooklyn, NY*

- Developed time series forecasting models in R to assess $21M partnership impacts, achieving 38% budget optimization through data-driven procurement processes.
- Created automated financial audit database tracking allocations across 160+ student organizations, ensuring fiscal compliance for $300K in annual funding (HTML, CSS, JavaScript).
- Prepare KPI reports for senior leadership supporting strategic institutional decision-making using PowerBI.

Course Administrator - Student Affairs — Dec. 2025 – Present
CUNY Brooklyn College — *New York, NY*

- Led a cross-departmental initiative to develop online learning management modules for 15,000+ annual students; designed structured data workflows for automated user provisioning and course management.
- Automated administrative reporting processes to analyze platform engagement metrics, specifically tracking enrollment and completion rates.

Technical Skills

Languages: Python, R, Fortran, SQL, C++, Java, MATLAB, Maple, JavaScript, HTML/CSS
Quantitative: Time Series Analysis, Monte Carlo Simulation, Stochastic Modeling, Regime-Switching Models
Computing: Parallel Programming (OpenMP), High-Performance Computing (HPC), Low-level Memory Management
Tools & Systems: Bloomberg Terminal, Intel MKL, Git, Bash Shell, Tableau, PowerBI, Excel
Spoken Languages: Russian (Reading, Writing, Spoken Intermediate)

Certifications

Bloomberg Market Concepts (BMC) | View Certificate ↗
Supervised Machine Learning (Stanford) | View Certificate ↗