James Ashton Jones

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Education

Georgia Institute of Technology — Atlanta, GA
Master of Science in Quantitative & Computational Finance — *Expected May 2027*

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science in Industrial Engineering, GPA: 3.9 — *Expected May 2026*

- *Concentration*: Analytics & Data Science
- *Relevant Coursework*: Capital Investment Analysis, Regression & Forecasting, Advanced Optimization, Probability, Statistics, Simulation Analysis & Design, Machine Learning, Financial & Managerial Accounting, Stochastic Systems

Experience

Los Alamos National Laboratory — May 2024 — August 2024
Risk Research Intern — *Los Alamos, NM*

- Researched and deployed radio-frequency identification (RFID) system pilots for real-time nuclear asset tracking, decreasing inventory time from **weeks** to **minutes** and **lowering** average worker radiation exposure
- Modeled and analyzed noisy RSSI **time-series data** across varying dBm levels and applied **statistical inference** and **optimization techniques** to minimize signal variance and improve system accuracy in clustered environments
- Developed probabilistic risk matrix quantifying **45** identified system threats, incorporating **likelihood–impact scoring** and **sensitivity analysis** and produced quantitative risk metrics adopted by **10+** researchers and directors
- **Skills:** Quantitative Risk Analysis, Microsoft Excel, Python, Probability & Statistics, Research

Student Quantitative Researcher — September 2024 — May 2025
Math Modeling Student Research Group (Georgia Tech) — *Atlanta, GA*

- Co-led an eight member research group developing a **stochastic, multivariate model** that uses economic, supplier, and operational datasets to build a **predictive supply chain risk framework** in Python for market forecasting
- Modeled the transport and management of energy resources across the U.S., with a specific focus on nuclear energy
- **Skills:** Python, Scikit-learn, Pandas, NumPy, Regression, Stochastic Process Modeling

Georgia Tech Solar Racing — September 2022 — April 2024
Strategy Developer — *Atlanta, GA*

- Engineered a Python based corner detection algorithm leveraging vehicle telemetry, attaining **90%** detection accuracy and quantifying a **9.1%** reduction in lap speed from cornering constraints, directly informing optimization of race strategy
- Collaborated with mechanical and electrical subteams to develop **modeling and simulation** frameworks to replicate vehicle dynamics pre-race, enabling accurate system-level performance forecasting
- **Skills:** Python, Pandas, NumPy, OpenCV, Matplotlib, Nonlinear Optimization, Statistical Analysis

Carroll Daniel Construction — May 2023 — August 2023
Project Manager Intern — *Gainesville, GA*

- Conducted analysis of transaction-level financial reports to **optimize** cost allocation across two **$10+ million** projects
- Deployed software quality assurance reporting, detecting **300+** issues and improving efficiency for superintendents
- **Skills:** Microsoft Excel, Procore, Fieldwire, Quality Assurance

Research and Projects

Predictive Modeling of Housing Market ETF Trade Outcomes Using Technical Indicators

- Developed predictive models **(XGBoost, KNN, Autoregressive Logistic Regression)** to classify ETF trade profitability, incorporating **feature engineering** on momentum, volatility, and 15 other technical indicators
- Conducted comparative analysis of model performance, achieving trade classification F1 score of **0.67** with recall up to **0.97** and outperforming baseline models by **15–20%**, while yielding insights into the limitations of supervised learning methods for financial time-series prediction

Machine Learning Integrated Entropic Risk Optimization for Portfolios

- Developed a ML integrated **entropic risk optimization** framework using **XGBoost** and **convex programming** (CVXPY) to construct risk-averse portfolios optimized for entropic value-at-risk and Sharpe performance under volatile market regimes

RFID Pilot Risk Analysis Research

- Main researcher and author of **50-page** report that provided a **quantitative analysis** of threats and opportunities for UWB and UHF RFID pilot systems, utilizing **probability theories** to assess risks, and detailing actionable solutions
- Presented the report to a panel of division directors and risk analysis researchers (team of 4)

Technical Skills

Languages: Python, SQL, R
Technologies: Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, Gurobi, OpenCV, Matplotlib, Seaborn, Plotly, BeautifulSoup, RegEx, Excel, Power BI, PyMySQL, PyQt5, GitHub, VScode, LaTeX