

# Aben Carrington

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## EDUCATION

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### The University of Chicago

#### Master of Science in Financial Mathematics, Dept. of Statistics

Chicago, IL  
December 2024

- **Concentrations:** Financial Computing & Financial Data Science
- **Courses:** Data Science Tools for Finance, Intro to Machine Learning (PhD level), Generative Models, Portfolio Theory & Risk Management, Stochastic Calculus, Monte Carlo Simulation, Numerical Methods, Advanced Computing for Finance (C++), HPC for Finance, Modern Applied Optimization

### Hamilton College

#### Bachelor of Arts in Physics (GPA: 3.7/4.0)

Clinton, NY  
May 2023

- **Courses:** Algorithms & Data Structures, Quantum Computing, Linear Algebra, Multivariable Calculus, Combinatorics
- **Awards:** Dean's List (all semesters)

### University of Edinburgh

#### Semester Abroad

Edinburgh, Scotland  
January – May 2022

- **Courses:** Linear Programming, Statistical Mechanics, Sensor Networks and Data Analysis

## SKILLS

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### Programming:

Python (NumPy, Pandas, Plotly, Scikit-learn, Optuna, LightGBM, TensorFlow, Keras, PyTorch, Pyro), C++, SQL, Shell Scripting

### Tools & Platforms:

AWS (Lambda, EC2), Git, CI/CD Pipelines, Docker, Unix/Linux Systems (HPC & Remote Computing), Jupyter Notebook, Python Virtual Environments, Dependency Management, LaTeX

## RELEVANT EXPERIENCE

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### New York Blood Center Enterprises

#### Site Selection and Logistics Analyst – Real Estate Division (Remote)

New York, NY  
June 2024 – Present

- Developed a web-based geospatial analysis tool incorporating open-source geospatial clustering algorithms and optimization techniques to streamline site selection and enhance data-driven decision-making for real estate expansion
- Automated P&L rollup reports for location analysis, improving data aggregation and reporting accuracy across enterprise real estate financials
- Engage in regular weekly meetings with senior executive leadership (C-Suite) to align analytics initiatives with organizational strategic objectives

### Mercury Presents, Inc.

#### Contract Developer (Remote)

Oneonta, NY  
October – November 2024

- Centralized vendor pricing data across multiple locations to facilitate direct item-level cost comparisons, enabling more effective negotiations and achieving a 15% reduction in weekly inventory costs
- Built a CI/CD pipeline leveraging GitHub Actions with a Docker containerized build step, automating deployment and ensuring environment consistency for backend AWS Lambda functions (with a custom Lambda Layer) and frontend hosting via Netlify

### Loomis, Sayles, & Co.

#### Quantitative Researcher – Project Lab, University of Chicago

Chicago, IL  
September – December 2023

- Collaborated as a member of a team to implement a CNN-based predictive model using TensorFlow to analyze equity OHLC data and generate trading signals
- Conducted decile-based performance analysis and back-tested a long-short trading strategy across asset classes, improving model accuracy on out-of-sample data

### Griffiss Institute

#### AFRL / RI Quantum Software Intern

Rome, NY  
June – August 2022

- Developed Python functions using Qiskit for quantum arithmetic and Fourier transforms, validated through simulations
- Designed a program for Quantum Random Walks, initializing qubits in maze structures to explore potential quantum applications in maze-solving problems

## PROJECTS

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### Credit Card Fraud Detection with Variational Autoencoder

January 2025

- Built a VAE-based anomaly detection model using Pyro and KL Annealing to detect fraudulent credit card transactions, achieving a recall of 97.3% with minimal sacrifice in specificity
- Benchmarked performance against canonical classification and anomaly detection models (LightGBM, CatBoost, Random Forest, Isolation Forest) to enhance model reliability

## ADDITIONAL EXPERIENCE

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### B Side Ballroom

Oneonta, NY

### Bartender / Key Holder

Summers 2019 – 2023

- Managed operations and ensured security during shifts in a high-volume hospitality environment
- Delivered exceptional service while training staff and maintaining inventory