# Kanwarpartap Singh Brar

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Portfolio: https://kanwarpartap-brar.github.io/portfolio/index.html

## EDUCATION

**Hofstra University**, Hempstead, NY | M.S in Data Science | Dec 2025 | GPA: 4.00
**Hofstra University**, Hempstead, NY | B.A in Mathematical Economics, Minors in Comp Sci & Comp Engg
GPA: 3.40 | May 2024
**CFA (Chartered Financial Analyst) Level 1 Candidate** | Exam Date: February 2026

## WORK EXPERIENCE

**Morrison Mentors -** Hempstead, NY | ***Teacher & Mentor*** **June 2022 - Present**

- Faced the task of teaching, facilitating, and implementing STEM Education for middle school and high school students, specifically, teaching courses focused on coding, aerospace engineering, drones, and cybernetics (500 + hours of teaching)
- Curated and implemented engaging lesson plans for over 5+ classes, each with 15-25 students, focusing on hands-on learning with Arduino programming and Python-based Tello drone programming
- Enabled 100+ students to gain hands-on experience in Python and drone-programming, improving engagement in STEM pathways

## CAPSTONE PROJECT

**AI-Driven Investment Strategies: Machine Learning Application in Asset Allocation & Risk Management**
*MS Data Science Capstone, Hofstra University*

- Designed a predictive model combining portfolio theory and machine learning to optimize asset allocation in equities
- Engineered features from macroeconomic, sentiment, and price data sources
- Applied models, including ensemble, SVMs, decision trees, logistic regression, and more
- Implemented quadratic programming to maximize risk-adjusted returns through Sharpe Ratio optimization and dynamic asset weighting

## PROJECTS

- **Machine Learning Evaluation for UFC Fight Outcomes & Healthcare Diagnostics**
  - Developed and tuned 8 ML models (Logistic Regression, SVM, Decision Tree, Random Forest, KNN, Perceptron) across binary (UFC) and multiclass (healthcare) classification tasks
  - Engineered fighter comparison vectors and patient features with application of feature scaling & 5-fold cross-validation
  - Achieved 67.3% accuracy in UFC predictions with Random Forest & identified ML model limitations in the healthcare dataset due to feature quality and class imbalances
- **Evaluating the Impact of Effective Federal Funds Rate Changes on Sectoral Stock Market Performance**
  - Implemented machine learning models to forecast sectoral stock responses to interest rate changes, providing insights into the impact of economic policy on market dynamics.

**SKILLS:** Python, R, SQL, Excel, Pandas, NumPy, Tableau, CFI: Financial Modeling (FMVA)