JAMES HUNT

Syracuse, NY | james.hunt940@icloud.com | +1.315.414.7362 | Portfolio

EDUCATION

Duke University, Durham, NC **May 2025**
B.S., Double Major in Mathematics and Computer Science **GPA:** 3.5/4.0

- **Relevant Coursework:** Design and Analysis of Algorithms, Algorithms in Data Science, Advanced Probability, Randomized Algorithms, Theory and Algorithms for Machine Learning, Applied Stochastic Processes, Algorithmic Trading, Database Systems, Differential Equations, Topology, Algebraic Structures, Real Analysis
- **Involvements:** Club Soccer

INDEPENDENT PROJECTS

Kalshi Exchange Trading **Sep 2022 – Present**

- Engineering a Python-based automated trading system to execute strategies on the Kalshi exchange, focusing on a market-making bot with arbitrage and gaming safeguards and a directional model.
- Engineering a data pipeline using Python to ingest, parse, and clean real-time data streams from multiple weather APIs (NWS, Synoptic) and the Kalshi websocket, preparing time-series data for analysis.
- Developing boosting and random forest models to predict temperature rounding errors in the weather data.

Algorithmic Market Regime Identification in Cryptocurrency **Feb 2025 – May 2025**

- Developed a quantitative model to identify distinct market regimes by applying k-means clustering to feature vectors derived from minute-resolution Bitcoin return series.
- Constructed empirical probability distributions for 30-minute forward returns for each identified regime by histogramming historical outcomes.
- Evaluated model performance by computing the Kullback-Leibler (KL) divergence between the cluster-derived return distributions and the real-time, market-implied distributions extracted from Kalshi contract prices.

Algorithmic Modeling for Price Prediction **Nov 2024 - Dec 2024**

- Developed and tuned Random Forest and XGBoost models to predict Airbnb prices in New York City, employing a full machine learning lifecycle from data analysis to model interpretation.
- Engineered features to boost model performance, including generating text embeddings for property "amenities" using the Python Sentence-Transformers library and creating a k-NN feature from the average price of nearby listings.

Predictive Modeling of Equity Returns Using Options Data **Oct 2024 - Dec 2024**

- Developed a machine learning model based quantitative trading strategy to predict 5-day stock returns by engineering features from options data and six different technical indicators.
- Processed and cleaned a seven-year dataset (2010-2017) of daily stock and monthly options data.
- Iteratively trained and evaluated distinct models, progressing to a final Random Forest regressor that predicts discretized "bucketed" returns.

Full-Stack E-Commerce Web Application **Oct 2024 - Dec 2024**

- Architected and developed a full-stack e-commerce platform in a team setting, building a Flask (Python) backend and integrating a PostgreSQL database to manage all user, product, and transaction data.

WORK EXPERIENCE

Bartender - James Joyce Irish Pub, Durham, NC **May 2024 – May 2025**
Warehouse Associate - Amazon.com, Inc., Syracuse, NY **Nov 2022 - Jan 2023**

TECHNICAL SKILLS, LANGUAGES, AND INTERESTS

Programming Languages: Python, Java, JavaScript, C, SQL
Libraries and Frameworks: Pandas, Scikit-Learn, NumPy, Flask, React, PyTorch, Django
Databases: PostgreSQL, MongoDB
Languages: English (native proficiency) | Spanish (advanced high proficiency) | Norwegian (beginner proficiency)
Interests: Music, Probability, Poker, History, Sports (Soccer, Basketball, Skiing, Surfing), Abstract Math, Cooking, Language