

NICOLAS FELIX

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EDUCATION

COLUMBIA UNIVERSITY

Dual Bachelor of Arts in Computer Science and Mathematics-Statistics

New York, NY

Spring 2026

- NCAA Division 1 Ivy League Track and field Athlete.
- Undergraduate GPA: 3.68.

EXPERIENCE

AUTOMATED ARBITRAGE BETTING BOT (PROJECT)

Remote/self

Volunteer Developer - Python, WebSockets, APIs (Community Project)

October 2024 – Present

- Automated identification of arbitrage opportunities from hundreds of markets across betting sites using APIs and WebSockets.
- Wrote filtering algorithm to identify high-confidence correlated betting events, leveraging cosine similarity and large language models (LLMs) to increase efficiency and reduce false positives by over 60%.
- Standardized data storage through schema design and collaborated in weekly team scrum meetings to achieve goals. Github.

CLAIMTEK

Irvine, CA

Software Engineer Intern

May 2024 – August 2024

- Designed web portal for licensees to manage account information, submit support tickets, and complete various workflows.
- Replaced manual client onboarding by automating legacy phone-base workflows, reducing manual onboarding interactions by 40% and decreasing staff support workload.
- Engineered a HIPAA-compliant data integration plan using Microsoft Dataverse and Azure for backend services. Facilitated secure API integration, streamlining data exchange for healthcare billing systems. System design.

BITCOIN MINING STOCK PRICE LAG INDICATOR (PROJECT)

Self

Personal Project

September 2023 – Present

- Traded a strategy leveraging mean reversion to exploit price lags between Bitcoin and mining stocks, achieved a 75% ROI.
- Utilized NumPy and pandas for data analysis and modeling, integrating financial data APIs via async.io web sockets.
- Reduced cost basis 5-10% with profits from writing options with high IV, capitalizing on theta decay during price stabilization.

OTHER PROJECTS

Self

Sudoku/2048 Solver

September 2024

- Solved 100% of valid Sudoku puzzles automatically with backtracking, MRV heuristic, forward checking, constraint propagation.
- Reached 2048 tile in 75% of iterations and 1024 tile in 98% of iterations by using minimax/ weighted evaluation function. Corner gradient and monotonicity heuristics increased algorithm success. Maximum tile reached is 4096.

Hand Gesture Classifier Machine Learning

November 2024

- Implemented a CNN architecture with one-hot encoding, classifying hand gestures with over 99% accuracy (Keras API).
- Incorporated dropout layers to address overfitting, enhancing performance by ~10% on validation data.
- Applied softmax activation for probabilistic output interpretation and one-hot encoding to format categorical labels for training.

BlackJack Probability Analysis

December 2024 – January 2025

- Programmed Blackjack game/library from scratch, with dealing/shuffling mechanisms to mirror real-world probabilities. C++.
- Simulated 1000's of games to assess effectiveness and Expected Value of different game strategies.

Warpspeed cryptocurrency token founder

March 2021 – July 2021

- Founded and led 4 peer programmers to develop a cryptocurrency token (Solidity) procuring \$30k in capital at launch.

ADDITIONAL

- Programming: Python, Java, C/C++, JavaScript, Node.js, React.js, HTML, CSS, Bootstrap, Swift, Solidity, R, Git, JSON, TCP/IP, sklearn, Flask, MongoDB, Matplotlib, github.
- Tools/Concepts: APIs, WebSockets, NLP, DSA, Applied Machine Learning, Statistical Modeling (NumPy/Pandas), Optimization, Gradient descent, Linear regression, Statistical analysis, Probability Theory, FLP Theorem, Blockchain, Consensus Protocols.