

Shiva Tripurana

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EDUCATION

University of Maryland – College Park

Bachelor of Science in Computer Science (Machine Learning Concentration) | Bachelor of Science in Applied Mathematics

FIRE Honors Program: Selected as 1 of 70 students for a 3-semester intensive research program

Relevant Coursework: Data Structures, Algorithms, Calc I, II, III, Linear Algebra, Software Engineering

College Park, MD

Expected May 2028

University of Pennsylvania

Leadership in the Business World & Jerome Fisher Management & Technology Summer Institute

Philadelphia, PA

June 2024 – Aug 2024

GPA: 4.0/4.0

Technical Skills

Languages: Python, Swift, Java, JavaScript, C++, SQL, HTML/CSS

Frameworks & Tools: SwiftUI, Firebase, OpenCV, TensorFlow, NumPy, Pandas, Matplotlib, Plotly, Jupyter Notebook, Steamlit, Git, Docker, Google Cloud Platform, Firebase, VS Code, Netlify, Railway

EXPERIENCE

Variant.

New York, NY

Software Engineering Intern

Jun. 2025 – Aug. 2025

- Implemented ML-based trading pattern detection, flagging 200+ high-risk events with >90% precision during backtesting
- Developed **LLM-powered** NER + keyword extraction for client feedback yielding 500+ sentiment insights weekly.
- Automated report generation workflows, cutting turnaround from hours to <10 minutes, saving ~40 analyst hours/week
- Built Python-based market data pipeline integrating **REST APIs** & unstructured datasets, reducing prep time by 50% and enabling analysts to process 10k+ rows daily.

Photon Insights

West Conshohocken, PA

Software Development Intern

Jun. 2024 – Aug. 2024

- Expanded ingestion to JSON and CSV formats with **GPU batch processing**, boosting volume to 50k+ transcripts/hour
- Deployed real-time, event-triggered sentiment monitoring pipelines generating 300+ automated alerts/day for trading teams.
- Optimized **FinBERT** sentiment API with async processing and tokenizer refactor, lowering latency by 35% and handling 1M+ requests/day

NextGenTennis

Princeton, NJ

Founder & CEO

Jul. 2020 – Present

- Earned over **25k in profit** through deployment of innovative DJI drone multi-angle capture-based coaching strategy
- Developed Python-based dashboards with Pandas & Matplotlib to track swing velocity, ball trajectory, and heatmaps.
- Built computer vision tennis analytics platform using **OpenCV**, **GAST pose estimation**, and object tracking to create 3D movement models from 2D footage.

PROJECTS

Spark – (iOS toolkit)

Jun. 2024 – Aug. 2024

- Developed Swift/SwiftUI iOS app for NFC-powered, interest-based matching using CoreNFC, MapKit, and CoreLocation.
- Integrated Firebase Auth, Firestore, and Cloud Functions for secure auth, real-time chat, and offline caching.
- Built NFC read/write sessions with payload parsing and validation; implemented annotated maps and photo capture.
- Implemented interest filtering via higher-order functions (map, filter) and dynamic category management with ObservableObject.

Covered Call Backtesting Platform – (Python, Jupyter Notebook)

Aug. 2023 – Present

- Built Python options backtester for weekly covered calls with configurable strike rules, assignment logic, and risk controls.
- Automated strike selection, premium reinvestment, and position scaling; benchmarked vs. S&P 500 with 20+ metrics.
- Integrated Yahoo Finance, Black-Scholes synthetic options, and real-time chains; built Streamlit/Plotly dashboards.