

# Yash Narayan

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## EDUCATION

University of Florida  
FL

Gainesville,

Bachelor of science, Computer Science

Aug. 2024 – Jun 2027

**Relevant Coursework:** Discrete Structures, Advanced Programming Fundamentals, Calculus 3, Linear Algebra, Data Structures and Algorithms, Introduction to Computer Organization, Introduction to Software Engineering, Engineering Statistics, Operating Systems.

GPA: 4.0

## EXPERIENCE

### Quantitative Research Virtual Internship

Nov 2025

JPMorgan Chase | Python, PyTorch, NumPy, SciPy

Remote

- Built pricing scripts for equity options using Monte Carlo simulation and Black-Scholes components, improving convergence stability through variance-reduction techniques.
- Analyzed factor exposures and portfolio sensitivities using Python-based regression and covariance modeling.
- Implemented risk metrics (VaR, expected shortfall, stress tests) and validated outputs against benchmark scenarios.
- Developed data-cleaning and feature-engineering routines for large market datasets, boosting downstream model accuracy in portfolio analytics.

### Undergraduate Research Assistant

June 2025 – Present

Timothy J. Garrett Laboratory | Python, OpenCV, cv2, NumPy, SciPy, PyQt

Gainesville, FL

- Contributed to a modular data processing system for mass spectrometry and chromatography workflows, handling **3 GB+** of analytical data.
- Developed vectorized signal-processing and statistical routines in NumPy/SciPy, improving isomer-detection accuracy by **27%**.
- Parallelized core computation modules using Python multithreading and I/O optimization, reducing total processing time from 1.5 hours to 10 minutes (**90%** faster).
- Built automated data-validation and reporting pipelines with PyQt GUI integration, cutting manual debugging effort by 60+ hours and reducing data errors by **>95%**.

### Software Engineering Intern

June 2025 – Aug 2025

Rebel Pouches | Rust, Next.js, Tailwind, MySQL

Remote

- Engineered a Rust-based backend and Next.js dashboard aggregating real-time sales and marketing metrics.
- Automated data pipelines, cutting reporting latency from 15 min to 5 s (**99.4%** improvement).
- Directed Agile sprints and peer reviews to stabilize production releases, eliminating **55%** of post-deploy bugs.
- Translated business requirements into scalable backend modules, ensuring alignment between engineering and operations.

## PROJECTS

### Market Risk Assessment | Python, PyTorch, NumPy, SciPy

Aug 2025 – Present

- Designed and trained a TensorFlow VQ-VAE-HMM model for real-time market risk profiling across **30 GB+** of financial indicators.
- Implemented a backtesting framework to compute portfolio alpha, beta, variance, and Sharpe ratio, supporting automated strategy evaluation.
- Deployed Value-at-Risk and volatility modules that improved predictive accuracy by **18%** in stress-testing scenarios.

### LORA PCB Tester | Python, Flask, Pinecone, Langchain

Oct 2025

- Led Aeronix Hackathon project developing an automated validation platform for LORA radio PCB signal integrity and compliance testing.
- Integrated an LLM-based schematic analysis pipeline generating MD/PDF/DOCX reports, cutting review time from 40 hours to under **5 min**.
- Implemented data parsing and test automation modules backed by Pinecone DB, reducing memory overhead by **19%**.

## CLUBS & ORGANIZATIONS

**GatorAI:** Contributed to applied machine learning projects in quantitative finance, including portfolio Value-at-Risk estimation.

**Software Engineering Club:** Led training sessions on full-stack development, Git workflows, and Agile sprints; mentored teams on system design and code review.

**Open-Source Club, Florida Engineering Society, Association of Computing Machinery:** Active contributor and participant.

## TECHNICAL SKILLS

**Languages:** C++, Python, Rust, Java, SQL, JavaScript

**Frameworks & Libraries:** TensorFlow, PyTorch, React, Next.js, Node.js, PyQt, OpenCV, NumPy, SciPy, REST APIs

**Database & Cloud:** MySQL, PostgreSQL, AWS, Docker, Kubernetes, Pinecone DB

**Computer Science Fundamentals:** Data Structures, Algorithms, Systems Programming, Concurrency, Threading Models, Object-Oriented Design

**Development Practices:** Agile/Scrum, Continuous Integration (CI/CD), Automated Data Systems, Technical Requirement Specification

**Tools:** Git, Jira, Slack, Excel, Linux