Yash Narayan

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Education

University of Florida Gainesville, FL
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