

Achintya Jha

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EDUCATION

Arizona State University

Tempe, AZ

B.S. Computer Science, B.S. Economics; **GPA- 4.15; Dean's List** (All semesters)

May 2026

College Activities: Sun Devil FinTech (**President**), Fall 2025 Cohort **Analyst** at University's Investment Management Fund (**\$1.6M**)

EXPERIENCE

Low-Light Image Enhancement

Tempe, AZ

Undergraduate Researcher - under Prof. Malena Espanol, Arizona State University

Jan. 2025 – May. 2025

- Engineered an **adaptive image enhancement pipeline** (Python, OpenCV, NumPy), optimizing CLAHE, gamma correction, and denoising parameters for **real-time processing** and significant perceptual quality gains.
- Outperformed traditional deep learning models by delivering **ultra-low computational latency** with comparable visual enhancement.
- Conducted failure analysis on **Hugging Face diffusion models**, identifying limitations in deterministic gamma-based forward processes and suggesting stochastic modeling improvements.
- Built a modular **evaluation and preprocessing suite** with custom metrics for contrast and perceptual quality benchmarking, enabling automated testing for future pipelines.

Epigeneres Biotech

Remote

Machine Learning & Data Science Intern

May. 2024 – Aug. 2024

- Designed **high-throughput ETL pipelines** in Python to process massive genomic datasets, improving data ingestion and preprocessing speeds by **5 times**.
- Developed and deployed **supervised ML models** for genomic sequence classification, automating the detection of cancer-linked patterns and reducing manual analysis time.
- Built a **scalable, modular Python API** integrating external bioinformatics databases and local genomic files, streamlining downstream analytics workflows.

Nucleus Software

Remote

Software Engineering Intern

Jun. 2023 – Aug. 2023

- Optimized backend services for a **large-scale financial portal** (Spring Boot, PL/SQL) for General Motors Financial, reducing latency by **30%** through targeted code refactoring and architectural optimizations.
- Built **end-to-end automated test pipelines** (Spring Boot, Selenium), improving reliability and reducing regression bugs across key financial dashboards, working in an Agile Team.
- Designed reusable API endpoints and improved data flow for financial dashboards, enhancing system scalability.

PROJECTS

Multi-Agent Decision Engine | Full-Stack AI Infrastructure | <https://github.com/achntj/multi-agent-reasoning/>

- Engineered a multi-agent reasoning system using local LLMs (via **Ollama**) and retrieval-augmented generation, simulating balanced strategic analysis from Optimist, Pessimist, and Synthesizer agents.
- Designed and deployed a scalable **FastAPI** (Python) backend with semantic search (**Sentence Transformers + PyTorch**), embedding management, and structured prompt chaining.
- Developed a **React + TypeScript** (Next JS) frontend with progressive loading indicators and real-time debate visualizations across agent perspectives; used Tailwind CSS for styling and Axios for API integration.
- Achieved low-latency inference through batched embedding generation, supporting fast debates over local knowledge bases.

Statistical Arbitrage Model | <https://github.com/achntj/statistical-arbitrage>

- Developed and implemented a Statistical Arbitrage strategy in **Python**, utilizing Engle-Granger cointegration tests and clustering algorithms **to uncover mispriced intermarket asset pairs** with mean-reverting opportunities.
- Implemented modular **trade signal generator** with pluggable ML and statistical models, to forecast spread deviations.
- Integrated **ML-based signal predictors** (Random Forests) to enhance spread forecasting accuracy and improve PnL consistency under varying market conditions.
- Built an end-to-end backtesting engine using **Pandas and NumPy**, integrating strategy logic, risk metrics (VaR/CVaR), and position tracking

SKILLS

Languages : Python, Java, C++, **TypeScript**, JavaScript, SQL, R, CSS (and Tailwind CSS)

Libraries: NumPy, Pandas, scikit-learn, PyTorch, TensorFlow, Matplotlib, Fast API, NLTK, React JS, NextJS, Express

DevOps & Infra: Docker, GitHub Actions, Vercel, GCP, AWS, PostgreSQL, Redis, Prisma

Tools & Dev: Git, UNIX, Vim, ZSH, Selenium, Deep Learning, Natural Language Processing, REST APIs, BullMQ

Math: Probability Theory, Stochastic Processes, Optimization, Econometrics, Empirical Modeling, Time Series Analysis