

# Achintya Jha

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## EXPERIENCE

### Undergraduate Computer-Vision Research Assistant

Jan 2025 – May 2025

Arizona State University

Tempe, AZ

- Developed an adaptive low-light image enhancement pipeline using **Python, OpenCV, and NumPy**, optimizing CLAHE and gamma correction parameters.
- Improved perceptual quality by 40%, while running at a 10x faster than traditional deep learning models.
- Automated benchmarking for 50+ enhancement algorithms with a modular evaluation suite.

### Machine Learning Engineer Intern

May 2024 – Aug 2024

Epigeneres Biotech

Remote

- Architected high-throughput Python ETL pipelines to process **2 TB+** genomic datasets, boosting ingestion and preprocessing **speeds by 5 time** for downstream ML training.
- 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 15+ bioinformatics databases and local genomic files, streamlining downstream analytics workflows.

### Software Engineering Intern

Jun 2023 – Aug 2023

Nucleus Software

New Delhi, India

- Optimized backend services (Spring Boot, PL/SQL) for General Motors Financial portal serving 100K+ users, **reducing latency by 30%** through targeted code refactoring and architectural optimizations.
- Implemented **end-to-end automated test pipelines (Spring Boot, Selenium)**, reducing regression bugs by 50% and improving deployment reliability across 8 financial dashboards.
- Designed reusable API endpoints with an improved data flow architecture, enhancing system scalability.

## PROJECTS

### Deep Audio Classifier and Visualizer (*PyTorch, FastAPI, Next.js*)

[cnn-audio-vis.vercel.app](https://cnn-audio-vis.vercel.app)

- Built a ResNet-style CNN with Mixup & SpecAugment, hitting **96.8 %** accuracy on ESC-50; trained with AdamW & OneCycleLR, tracked in TensorBoard.
- Built a type-safe **FastAPI** backend with **Pydantic** data validation and automated CI/CD with GitHub Actions.
- Deployed interactive dashboard (**Next.js + Tailwind**) showing waveform, Mel-spectrogram, and feature-map visualizations; **1.8K unique users, 99.9 % uptime** on Vercel.

### Multi-Agent Decision Engine

[github.com/achntj/multi-agent-reasoning](https://github.com/achntj/multi-agent-reasoning)

- Engineered a full stack multi-agent reasoning system using LLMs (via **Ollama**) and retrieval-augmented generation, simulating balanced strategic analysis from Optimist, Pessimist, and Synthesizer agents.
- Built **FastAPI backend** with semantic search (**Sentence Transformers + PyTorch**), structured LLM prompt pipelines, and modular APIs for document-driven reasoning.
- 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.

## EDUCATION

### Arizona State University

Tempe, AZ

B.S. Computer Science, B.S. Economics; **GPA- 4.0; Dean's List** (All semesters)

Aug 2022 – May 2026

- President**, Sun Devil FinTech Club - Lead workshops, projects, and code-reviews on quant/ML topics.
- Quantitative Analyst**, ASU Investment Management Fund (\$1.6M)

## SKILLS

Languages: **Python, TypeScript**, JavaScript, Java, SQL

Libraries: **React**, Next.js, FastAPI, **PyTorch**, scikit-learn, NumPy, Pandas, Matplotlib

Systems & Tools: **Docker**, GitHub Actions, Redis, **PostgreSQL**, **AWS**, GCP, Vercel, Git, UNIX