John P. Acosta

jpa53@njit.edu | github.com/502john | linkedin.com/in/johnacosta1 | john-acosta.com

EDUCATION

NEW JERSEY INSTITUTE OF TECHNOLOGY *Newark, NJ*

Bachelor of Science in Computer Science, Ying Wu College of Computing **Expected May 2027**

- GPA: 3.76 **Awards**: NSF S-STEM Scholar, Dean's List (All Semesters), Kupfrian Memorial Scholarship

- Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Intensive Programming in Linux (C), Programming Language Concepts (C++), Operating Systems, Computer Networks, Artificial Intelligence, Data Science, Database Design & Management, Linear Algebra, Probability & Statistics

SKILLS

Languages: Python, Java, C/ C++ **Frameworks**: Flask, React/Next.js, Tailwind CSS **Data/ML**: NumPy, pandas, scikit-learn, PyTorch, HuggingFace Transformers

Tools: Git/GitHub, Linux, Docker, LangChain **Databases**: Firebase, SQLite

PROFESSIONAL EXPERIENCE

Incoming Software Engineer Intern **Summer 2026**

PGIM Global Asset Management

Applied AI Research Engineer Intern **Jan 2026 - Present**

NJIT AIM Lab

- Conducting research and delivering weekly technical presentations to biomedical experts, translating current literature into actionable model selection and architecture recommendations for an agentic tumor segmentation system
- Performed EDA across research datasets to assess quality, distributions, and preprocessing requirements, informing downstream modeling decisions
- Fine-tuning and benchmarking networks (EMCAD) and VLMs (Qwen variants) on BraTS, with active training runs on NJIT's Wulver HPC cluster
- Built LangChain demos to prototype agentic workflows and validate the feasibility of connecting segmentation models to a surgeon-facing interface
- Drove adoption of structured requirement analysis and feasibility planning within the team, applying SDLC principles to scope and prioritize research engineering decisions

Deep Learning Forecasting Research Intern **Aug 2025 - Jan 2026**

Grace Hopper AI Research @ NJIT

- Built modular Python preprocessing routines (NumPy, pandas) for cleaning, trimming, and interpolating 10+ multi-location epidemic datasets (~900 weekly observations each), creating consistent train/test splits and enabling reliable rolling-origin forecasting across 5 disease types
- Parallelized forecasting workflows with multi-threaded Python execution, reducing runtime by ~80% and enabling rapid model experimentation across diseases and hyperparameters without HPC resources
- Built project-wide logging utilities to ensure experiment reproducibility and mid-run recovery, automatically saving predictions, metrics, and visualizations into unified master CSVs

Applied AI Intern **Sept 2025 - Jan 2026**

Chambers Capital Ventures

-Built NLP pipelines (clustering, sentiment analysis, LLM classification) on vectorized survey data, visualizing persona groups and sentiment trends through an interactive Streamlit dashboard

TECHNICAL PROJECTS

AI-TUTOR | Lead Developer | Python, GraphRAG, Docker, Flask, BeautifulSoup

- Built a pedagogical tutor system that answers questions by mapping foundational concept prerequisites using a knowledge graph, supporting both local and global search to retrieve fine-grained explanations and broad topic summaries beyond what standard RAG can achieve
- Implemented a BFS web crawler from scratch using Python and Beautiful Soup, traversing linked pages from a seed URL to build the content corpus
- Extended and modified nano-graphrag functions to enforce domain-specific entity extraction and relationships, customizing prompts to surface concept nodes, resources, and examples in structured learning paths
- Built a rate-limited LLM wrapper and custom local RAG prompt to control API costs and ground responses strictly in graph-retrieved context
- Modified a Docker devcontainer to support M-series Macs and selective service loading, eliminating unnecessary image downloads for non-GPU environments
- Exposed the system through a Flask backend and Streamlit UI, enabling natural language queries that return ordered concept paths, explanations, and linked resources

EXTRACURRICULAR ACTIVITIES

Break Through Tech AI Fellow | Cornell Tech **Jun 2025 – Present**

Society of Hispanic Professional Engineers | NJIT **Jan 2024 – Present**

Google Software Engineering Fellow (Selected 2x) | G-SWEP **Jul – Sept 2025**