

Ambati Swechcha

Newark, NJ | sa3323@njit.edu | LinkedIn | GitHub | Website

Education

New Jersey Institute of Technology — Master of Science in Computer Science

- GPA: 3.83/4.0
 - Recipient of the Graduate Provost Scholarship
 - **Coursework:** Operating Systems Design, Database Management Systems, Python for Web API Development
- Mahindra University** — Bachelor of Technology in Computer Science and Engineering
- GPA: 7.82/10
 - **Relevant Coursework:** Data Structures, Algorithms, Operating Systems, Database Systems, Software Engineering, Machine Learning, Deep Learning, Quantum Computing

Technical Skills

Programming Languages: Python, Java, C

Backend: FastAPI, REST APIs, JWT Authentication

Frontend: React, HTML, CSS

Databases: PostgreSQL, SQLAlchemy

Machine Learning: PyTorch, TensorFlow, NLP, Transformers (BERT, BART)

DevOps & Tools: Docker, GitHub Actions, CI/CD, PyTest, Playwright, Git

Experience

Summer Research Intern, QMatter Labs LLC

- Enhanced a hybrid quantum genetic algorithm
- Integrated real-world datasets and redesigned fitness functions
- Developed performance metrics to analyze algorithm convergence and scalability
- Tools: Python, Optimization Algorithms, Quantum Computing

Projects

AI-Powered Lesson Generator

- Built a full-stack platform generating structured programming curricula from topic descriptions
- Integrated GPT-4/3.5 with fallback logic and automated testing via GitHub Actions
- Tools: Python, FastAPI, React, TypeScript, Docker, SQLAlchemy

BREAD Calculator with JWT Authentication

- Developed a FastAPI application with JWT authentication implementing full BREAD operations
- Implemented CI pipelines and automated tests using GitHub Actions and Playwright
- Tools: Python, FastAPI, PostgreSQL, Docker

Breast Cancer Classification using Deep Equilibrium Models

- Implemented a multi-scale Deep Equilibrium Model for mammogram classification
- Applied explainable AI techniques for model interpretability
- Tools: Python, PyTorch, TensorFlow

Cricket Commentary Analysis using NLP

- Performed sentiment analysis and summarization on sports commentary transcripts
- Leveraged Transformer-based NLP models for text understanding
- Tools: Python, BERT, BART, NLTK, PyTorch

Leadership

President, Qubit — Quantum Computing Club

Oct 2023 – Jun 2024

Certifications

IBM Qiskit Quantum Explorers — **Advanced Badge**

Quantum Machine Learning (Qiskit) — **Excellence Certificate**

Introduction to Quantum Computing — IBM Quantum & The Coding School