

# Muhammad Talal Naveed

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## EDUCATION

### New York University Abu Dhabi

*Bachelor of Science in Computer Science, Applied Mathematics and Finance*

Graduation: May 2027

Abu Dhabi, UAE

- *Honors: Full-Ride Scholarship*

## WORK EXPERIENCE

### Swiftbox

June 2025 - August 2025

*AI Intern*

Abu Dhabi, UAE

- Developed a full-stack AI chatbot with a ChatGPT-style interface powered by Google Gemini AI, featuring real-time conversation UI, execution tracking, and sentiment-based feedback.
- Built a responsive React + Chart.js + MongoDB dashboard to track KPIs (response time, success rate, sentiment trends, weekly interactions).
- Integrated Python (LangChain + LangGraph) with a Node.js backend and Google Generative AI API, supporting conversation history, analytics, and REST endpoints.

### Center for Quantum and Topological Systems

July 2024 - February 2025

*Quantum Machine Learning Research Assistant*

Abu Dhabi, UAE

- Researched robustness of quantum machine learning models against adversarial attacks on image datasets.
- Training Quvolutional and simple quantum neural networks to evaluate accuracy and resilience.
- Developed efficient defense strategies to mitigate adversarial vulnerabilities in quantum models.
- Conducted performance analyses and documented findings to advance quantum machine learning research.

### Pet Republic

August 2024 - December, 2024

*Software Development Intern*

Abu Dhabi, UAE

- Revamped the company website, resolving flaws and enhancing user experience with a focus on frontend development using React, HTML, and CSS.
- Coordinated with veterinary clinics, gathering requirements and feature requests to tailor services on the platform.
- Conducted usability tests and incorporated feedback to improve site navigation and functionality.

## PROJECTS

- Gemini Chatbot with Dashboard – **MERN, Python, Gemini AI**: Full-stack chatbot with ChatGPT-style UI, real-time Gemini responses, conversation history, feedback system, and an analytics dashboard.
- Personal Portfolio – **React, Tailwind, Vercel**: Responsive personal portfolio website showcasing projects and skills.
- Chromify – **Python (Processing 3)**: Physics-based remake of the game Color Switch with gravity jumps, rotating obstacles, color switching, collision detection, audio, and scoring.
- HarvestShare – **HTML, CSS, Bootstrap, JS, Python**: Web platform prototype connecting food donors with charities and individuals facing hunger.
- Quantum-Classical Hybrid MNIST Classifier – **PennyLane, TensorFlow, PyTorch**: Compared classical CNNs with quantum-enhanced models on MNIST and evaluated robustness under adversarial attacks (FGSM, PGD).
- Library Management System – **C++ (OOP)**: Console-based system to manage books, users, and transactions with features like search, issue/return, and record management.

## SKILLS

**Programming & Languages:** Python, C++, JavaScript, TypeScript, Visual Basic, Assembly Language, HTML, CSS

**Web Development:** React, Node.js, Express.js, Tailwind CSS

**AI/ML & Quantum:** PyTorch, Keras, PennyLane, Qiskit, LangChain, LangGraph

**Databases & Data Tools:** PostgreSQL, MongoDB, Excel

**Tools:** Git, GitHub, VS Code, Photoshop

**Other Skills:** Public Speaking, Leadership, Team Management, Communication, Problem Solving, Time Management