# Farhaan Khan

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## Summary

Machine Learning Engineer focused on computer vision and quantum-inspired algorithms. Experienced in building scalable backend systems and developer tools using Python, PyTorch, C++, and Docker. Proven ability to lead research-driven projects from concept to **IEEE journal publication**.

## Education

**Vellore Institute of Technology** — Vellore, India
*B.Tech in Computer Science and Engineering (Blockchain Technology)* — *Sept. 2022 – May 2026*

## Experience

**Alfaleus Tech (Med-tech startup)** — Hyderabad, India
*Software Developer Intern* — *June 2025 – Aug. 2025*

- Led backend development for an internal platform (Flask, PostgreSQL) supporting 3+ production tools.
- Collaborated cross-functionally with 4 teams to drive system integration and architectural decisions.

**Imaginate XR (AR/VR simulations)** — Hyderabad, India
*Computer Vision Research Intern* — *June 2024 – July 2024*

- Optimised a 3D reconstruction pipeline using OpenCV and PyTorch, reducing rendering latency by 30%.

## Projects

**Quantum-Enhanced Deepfake Detection** | *Python, PyTorch, Qiskit, QAOA* — 2025

- Developed a quantum-hybrid framework improving deepfake detection accuracy by **2.5 percentage points** over classical baselines on FaceForensics++.
- Designed a QAOA-based feature selection module and quantum-inspired attention mechanism to capture subtle manipulation artifacts.
- Achieved a **45% reduction in calibration error** and improved forensic interpretability using Grad-CAM.

**Visor: Multi-Language Code-to-Flowchart Visualization** | *TypeScript, Tree-sitter, Mermaid.js* — 2025

- Built a VS Code extension with **1k+ downloads and 60+ GitHub forks** for real-time flowchart generation.
- Implemented bidirectional navigation between source code and flowcharts, improving debugging efficiency.
- Integrated cyclomatic complexity analysis with visual indicators for code quality assessment.

## Publications

Farhaan Khan, Aditya Sareen, Akash Suresh Kumar, M. Bhuvaneswari, "A Quantum-Hybrid Framework for Enhanced Deepfake Detection: Integrating QAOA-Based Feature Selection With Quantum-Inspired Attention Mechanisms," *IEEE Access*, vol. 14, 2026.
DOI: 10.1109/ACCESS.2026.3659021

## Certificates

**AWS Certified Cloud Practitioner**

## Key Achievements

- Top 10 in stream with a CGPA of 9.09 / 10.
- 3× Merit Scholarship recipient for academic excellence.
- **Visor** reached **1k+ users and 60+ GitHub forks**, demonstrating global developer adoption.

## Technical Skills

**Languages**: Python, C++, TypeScript, Solidity
**Libraries & Tools**: PyTorch, TensorFlow, OpenCV, Pandas, Docker, AWS, Flask, React
**Databases**: PostgreSQL, MongoDB
**Key Areas**: Computer Vision, Deep Learning, Quantum-Inspired ML, System Design, Git