**DEV RISHI VERMA**

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## EDUCATION

**Bachelor of technology,** JK Lakshmipat University *Expected:2026*

Relevant Coursework: Linear Algebra, Statistics, Calculus, Algorithms, Artificial Intelligence, Machine Learning (Stanford), Deep Learning (IIT Madras top 5% rank All India out of 7000 students), Independent Study on Quantum Algorithms.

**CGPA: 8.6** Honor List student (Based on academic excellence)

**Quantum Computing Summer School 2024**

Relevant Coursework: Quantum Circuit Design, Noise Induction, Error Correction.

**Grade: 100/100**

## EXPERIENCE

**Teaching Assistant** Aug 2024 – Dec 2024
**JK Lakshmipat University** *Jaipur, IN*

- As a Teaching Assistant for Data Structures and Algorithms, I support sophomore students during lab hours by solving doubts, clarifying concepts, and providing hands-on coding guidance. I also mentor them on broader computer science topics and offer support. My role involves collaborating with professors to enhance course materials and ensure student success.

**Intern** June 2024 – Aug 2024
**QWORLD** *Remote*

- Under the guidance of Professor Jarek Duda and Dr. Pawel Gora, I focused on designing circuits for quantum algorithms using CPT symmetry in 2WQC, aiming to reduce time complexity and improve noise resilience. I presented this work at the Hypercomplex seminar in Poland, and, because of my contributions, I continue to work with them as a member of their 2WQC XPRIZE team. (https://arxiv.org/abs/2406.09450)

**Intern** May 2024 - Jul 2024
**Defense Research & Development Organization (DRDO)** *Dehradun, IN*

- Worked under the guidance of scientists at the Defense Electronics Application Lab (DEAL) of DRDO, developing advanced image fusion algorithms to enhance remote sensing data using techniques such as PAN sharpening and Principal Component Analysis (PCA).

## PROJECTS

- **Grover's Algorithm for crop monitoring:** Implementing Grover's Algorithm for crop monitoring using AWS Bracket. Currently an independent research work (Work in progress).
- **Multi-Class Abnormality classification using VCE :** Worked on utilizing vision transformers to detect over 10 distinct abnormality classes in VCE frames for the CVIP Capsule Vision Challenge'24 in which our team was ranked **7th globally**. ( https://arxiv.org/abs/2410.19973 )
- **Real Time accident detection :** Developed a real-time accident detection system leveraging CCTV footage analysis on edge devices like Jetson Nano and NodeMCU, with automated alerts sent to authorities via webserver upon accident detection.
- **Lie Detection model:** Developed an advanced lie detection model by integrating computer vision, NLP and voice processing on a multimodal dataset to improve law enforcement investigation methods.
- **Tennis Video Analyzer:** Designed a sports video analytics system for tennis utilizing YOLO and OpenCV, enabling accurate ball tracking and player identification for enhanced performance analysis.

## SKILLS

- **Quantum Computing:** Experienced with Qiskit, PennyLane, IBM Quantum Circuit Composer, and AWS Braket. Knowledge in quantum circuit design, simulation, and optimization.
- **Deep Learning:** Python, C++, PyTorch, Keras, NumPy, Pandas, OpenCV, CNNs, RNNs, LSTMs, Transformers, and tasks in computer vision and NLP.
- **Soft Skills:** Research Writing, Problem-solving, Critical thinking, public speaking.

## EXTRA-CURRICULAR & LEADERSHIP ACTIVITIES

- Vice President of College Coding club, Host and organizer of various events and seminars.