

Shisheer S Kaushik

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Education

Indian Institute of Technology (IIT), Jodhpur

Graduating date: Jun. 2025

M.Tech. in Quantum Science and Technology | [Link to all courses](#)

GPA: 7.8/10

Relevant Courses: Classical & Quantum Machine Learning, Complexity Theory, Quantum Mechanics, Quantum Information Science & Computation, Open Quantum Systems, Classical & Quantum Algorithms, Advanced Quantum Cryptography & Coding, Software and Data Engineering, Device-independent Quantum technologies

B N M Institute of Technology (BNMIT)

Graduated date: Jun. 2022

B.Eng. in Electronics and Communication Engineering | [Link to all courses](#)

GPA: 8.37/10

Relevant Courses: Network Analysis, Computer Architecture, Signals & Systems, Verilog HDL & VLSI Design, Information Theory & Coding, Digital Communication, C++ & Python Application Programming, Network Security, Cellular & Space Communication

Experience

[QNU Labs Pvt. Ltd](#)

May. 2023 - July. 2023

Summer Intern Fellow

PHP, JavaScript, SQL Server, HTML, CSS, Bootstrap, Qiskit, Python, Git, GitHub

- I collaborated closely with a team of seasoned professionals on a project entitled Browser-Based Quantum-Safe VPN PQC Plugin as part of the SparQ Summer Internship.

[Qkrishi Quantum Pvt. Ltd](#)

Feb. 2023 - April. 2023

Junior Researcher

Qiskit, Python, NetworkX, Dwave-ocean-sdk, Bootstrap, Git, GitHub, Docker, Linux

- Worked on developing and evaluating a novel quantum optimization algorithm to solve the travelling salesman and vehicle routing problem using phase estimation technique by encoding the given distances between the cities as phases.

[Elite Techno Groups](#)

Aug. 2021 - Sep. 2021

Data Science Internship

Python, SQL-query, JSON, Docker, Git, GitHub

- During one month of internship, I implemented an Inventory Management system by transmitting structured data network in JSON format.
- This system was used to keep track of products, perform sales analysis and generate a statement consisting of the purchase history of the company.

[Qworld Association \(QIntern-2021\)](#)

Jul. 2021 - Aug. 2021

Summer School Internship

Qiskit, Python, Git, GitHub

- The project focused mainly on creating a platform for a comprehensive and curated collection of resources aiming to help understand Quantum Computing.
- I was allotted to one respective group under a mentor to work on major computational issues faced during Quantum Application Programming, like "Quantum Error Correction".
- During the course of my internship, I devised a Quantum Error Detection model based on surface error code, It enhanced my skills and knowledge in this particular field.

Projects

[Autism Disease Detection Using Quantum Transfer Learning Techniques](#)

Oct. 2023

Quantum ML model

Pennylane, Python, Tensorflow, Torchvision, Keras, Kaggle, Git, GitHub

- Build a diagnostic model for medical images by employing Convolution Neural Networks (CNNs) and transfer learning techniques.
- Understanding the CNN in terms of Quantum Gates and circuits and compared the results between Classical CNN and QCNN.
- Implemented data preprocessing techniques to enhance model performance.
- Collaborated with a multidisciplinary team to integrate quantum concepts into the existing machine learning framework.

Benchmarking and Solving Vehicle routing problems on various Quantum Computing (QPU's) Feb. 2023 - April. 2023

Quantum based Optimization project

Qiskit, Python, NetworkX, Dwave-ocean-sdk, Bootstrap, Git, GitHub

- This project was a part of my work as a junior researcher at Qkrishi, Gurgaon, India. The objective is to develop a novel optimized quantum algorithm using several methods, like the phase estimation technique to solve the traveling salesman problem and vehicle routing problem.
- And benchmarked the respective routing algorithm on various available QPU's by testing on several optimization algorithms to observe and compare the best optimal (minimal) cost.

Malware detection in Android through Quantum Machine Learning model

Jan. 2023

Quantum ML model

Qiskit, Python, Tensorflow, Torchvision, Keras, Git, GitHub

- I developed a customized machine learning model to detect malware in the android by analyzing and classifying the behaviour of mobile applications, as malicious or benign.
- It utilizes an open-source framework 'SecMI' for training, and evaluating machine learning models. And a Hybrid quantum-classical machine learning algorithm VQC for dataset classification.

Quantum QR-Code Generator

Mar. 2021 - April. 2021

Quantum Algorithms based project

Python, Git, GitHub

- I built a model which generates a QR-code by encoding the quantum state in a two- dimensional array of black and white squares, by utilizing the Bernstein-Vazirani algorithm for searching the secret bit string of an oracle

Quantum secure communication via Steganography using BB84, BBM92 & Ekert91 Protocol

Feb. 2021

Quantum Communication protocols based project

Qiskit, Python, HTML, Streamlit, Git, GitHub

- An interactive model, that would enable users to experiment with the encryption and decryption process to transmit secret messages securely, using the Quantum key Distribution methodology, particularly the BB84, BBM92 and Ekert91 protocol.

Celebrity Look-alike classification model

Dec. 2020 - Jan.2021

OpenCV project

Python, OpenCV, Tensorflow, Torchvision, Git, GitHub

- This project is a face-recognition model built using dlib's python library and CNN to identify and classify a celebrity look-alike portrait from the picture being uploaded.
- The model produced 98.38 percent similarity proportion when tested with two distinct metrics based approaches such as Euclidean distance and Mahalanobis distance.

Designing Wearable Antenna

May. 2021 - July. 2022

UHB Micro-strip patch antenna

CST Studio, HSS, OriginLab, LATEX, GitHub

- The aim of the project is to design and fabricate a very efficient, highly sensitive and low-cost micro-strip patch antenna with an etched customized logo which is tailored to perform the intended application of remotely monitoring the health.

Publication

Wearable Antenna For Remote Health Monitoring

Feb. 2023

Published in IEEE-2023

- This article presents the design and fabrication of a wearable, fully flexible and efficient micro-strip patch antenna pasted on both jeans textile and FR4 (lossy) material to operate at $f = 2.66$ GHz and $f = 2.3$ GHz as a centre frequencies. This work discusses, experimental and numerical results of the antenna designed and fabricated.

Leadership and Volunteering

IBM Qiskit Advocate

Jun. 2023 - Ongoing

Open source contributor & mentor

- The Qiskit Advocate program is a global initiative.
- As an Advocate, I have joined the most passionate group of people in quantum computing. I work together to grow the Qiskit community by organizing events, making open-source contributions to Qiskit code, creating educational content, and more

Qworld Association Global Work

April. 2021 - Dec. 2022

Academic Mentor & Project contributor

- Guiding a community of 550+ CS students in their professional development, technical skills and interest in tech.
- Orchestrating workshops, coding sessions, and events to enhance skills and encourage continuous learning.

Skills

Languages:

Python, C++, HTML, JavaScript, Qiskit, PennyLane, QuTiP

Technologies & Tools:

Django, Git, Linux, Tensorflow, OpenCv, NS-2, CST Studio, Docker

Achievements

[IBM Certified Associate Developer](#)

[IBM Quantum Challenges](#)

[QC-Hackathon](#)

[Excellence in academics](#)

Certifications

[Cryptography and Network Security](#)

[Quantum 101: Delft X](#)