Jayesh Hire

hire.jayesh123@gmail.com +919820921466 Kalyan, India 15/05/2001 Jayesh Hire

PROFILE

A skilled professional with a solid theoretical background in quantum computing and quantum information. As an experienced individual in various subfields of quantum computing including quantum algorithms, optimization, quantum machine learning, and theoretical understanding of quantum cryptography, I am eager to apply my knowledge to practical problems. I believe in an open exchange of ideas and insights, making science more open and collaborative. I am currently seeking an opportunity to join a dynamic and innovative team leveraging the modern-day tools of quantum computing for scientific advancements and addressing global problems.

PROFESSIONAL EXPERIENCE

Project Engineer - Quantum AI Group 09/2025 – Present
Centre for Development of Advanced Computing (C-DAC) Delhi, India
- Working on the analysis of EEG brain signals to explore their integration with quantum machine learning models.
- Designing hybrid quantum-classical pipelines for brain-signal classification and cognitive state prediction.
- Investigating quantum feature encoding methods to enhance the representation of non-linear EEG patterns.
- Contributing to research documentation and experimental studies on quantum applications in neuroscience.

R&D - Quantum Computing Specialist 06/2024 – 09/2025
TrevasQ Remote
- Created Quantum Hash functions as the backbone of a Quantum Digital Signature workflow, enabling secure and future-proof digital verification.
- Led the development of decentralized quantum machine learning frameworks for privacy-preserving healthcare applications.
- Researched and applied single-qubit encoding methods across multi-qubit systems to optimize quantum neural network architectures.
- Spearheaded research proposals and strategic roadmaps to accelerate the adoption of quantum computing in real-world industries.
- Collaborated with academic and industry partners to drive interdisciplinary innovation in quantum technologies.

Project Intern 06/2024 – 09/2024
QWorld Remote
- Focused on exploring mathematical approaches and analytical results for composite quantum systems and modeling.

Project: Enhancing Quantum Information Science with Efficient.
Quantum Resources Mentor: Dr. Fadwa Benabdallah @Université Mohammed V de Rabat

Quantum Computing Intern 08/2023 – 05/2024
TrevasQ Remote
- Developed and implemented a quantum watermarking algorithm to strengthen data security and integrity.
- Studied and implemented Grover's search algorithm for real-world flight data retrieval systems.
- Conducted in-depth studies of quantum algorithms to identify high-impact, real-world use cases.

Project Intern 03/2023 – 05/2023
QuantumAI Remote
- Worked on Quantum circuit and Quantum Simulator.
- Built a quantum simulator model for mimicking real hardware.
- Analysing Circuit Parameters.

EDUCATION

Master of Science (Physics) 2021 – 2023
University of Mumbai Santacruz, India
CGPA - 8.46 / 10
Projects:
- Effect of Phase and Spatial Distinguishability of Photon Pairs on the Entanglement Fidelity.
- Quantum Neural Networks for Fashion MNIST Classification.

SKILLS AND STRENGTHS

Quantum Progrmming: Qiskit, Cirq, Pennylane | **Python** | **Latex Overleaf** | **MATLAB** | **Problem Solving** | **Analytical Thinking** | **Data Analysis** | **Leadership**

LANGUAGES

English ● ● ● ● ● Marathi ● ● ● ● ●

Hindi ● ● ● ● ●

PUBLICATIONS

FedVQC for Genomic Data: A Quantum-Enhanced Privacy Approach
(Under Review)

Optimising Pulsar Classification in Astronomy through Quantum-Assisted Approach 07/2025
Research Square(Preprint) - Springer

J. V. Hire, V. Gawande, L. Kumar and P. K Panigrahi, "A Novel Two-Step Hybrid Quantum Watermarking Technique." 03/2025
2024 International Conference on Engineering and Emerging Technologies (ICEET) - IEEE

Hire, J.; Gawande, V.; Dhande, S. "Quantum-Accelerated Flight Selection: Probing Grover's Algorithm and Quantum Device Efficiency." 08/2024
International Journal of Innovative Science and Research Technology, Volume. 9 Issue.8

Dindorkar, S.; Mistry, J.; Hire, J.; Jain, K.; Khona, N.; Peddakolmi, S.; More, P. "Synthesis of graphene oxide enhanced AGAR Composites: a biocompatible photo-catalyst for degradation of organic dyes." 12/2020
American Journal of Undergraduate Research 2020, 17 (3), 29–40.

ACHIEVEMENT

Poster Acceptance,"FedVQC for Genomic Data: A Quantum-Enhanced Privacy Approach" 12/2025
Quantum Science and Technology for Sustainable Development (QSTSD) 2025, Khalifa University Abu Dhabi, UAE

Poster Acceptance, "Variational Quantum Eigensolver with Tensor-Network-Enhanced Measurement-Based Quantum Computing" 09/2025
Theory of Quantum Computation, Communication, and Cryptography (TQC) 2025, IISc Bengaluru Bengaluru, India

Top 15 finalist out of 137 teams in the Pasqal's "Blaise Pascal Quantum Challenge 2025" 03/2025

Secured acceptance for oral presentation of the paper "A Novel Two-Step Hybrid Quantum Watermarking Technique" at ICEET 2024. 12/2024 Dubai, UAE

Presented innovative pulsar classification using quantum models at the Space Research Conference, advancing astronomical data analysis with Quantum Technology. 10/2024 Abu Dhabi, UAE
UAE Space Agency

2nd Prize - Quantum Federated Summer Hackathon 2024 08/2024
Quantum Formalism

Global Quantum Computing Program Scholar 07/2023
WOMANIUM Quantum 2023: Global Quantum Scholarship

COURSES AND CERTIFICATIONS

Quantum Optimizaion, IBM Quantum Research 05/2023 – 06/2023
IBM

IBM Quantum Challenge: Spring 2023 05/2023
IBM

Quantum Machine Learning, IBM Quantum Research 01/2023 – 02/2023
IBM

Hands-on workshop on Quantum Computing with Amazon Bracket 05/2023
AWS Quantum