Devesh Kumar

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Indian Institute of Technology Roorkee
Qulabs Software (India) Pvt. Ltd.

Area of Interest

Quantum Simulations | Real world applications of Quantum Computing | Physical realization of quantum computing

Education

Year	Degree/Examination	Institution/Board	CGPA/ Percentage
2022	MSc Physics	Indian Institute of Technology, Roorkee	7.32
2020	Graduate (BSc Hons. Physics)	Acharya Narendra Dev College, University of Delhi	8.39
2017	Intermediate (Class XII)	Jawahar Navodaya Vidyalaya Pilibhit	89.20 %
2015	Matriculate (Class X)	Jawahar Navodaya Vidyalaya Pilibhit	9.00

Experience

Qulabs Software (India) Pvt. Ltd. | Quantum Research Associate
Full time (Aug 2022 - Present)

- Working on molecular simulations using quantum computers
- Developed a software QRNG using Digital quantum simulations (Filed IP ref. no.: 202211076158)
- Managing a team of seven people for quantum chemistry simulation project

Quantum Simulation Intern (Feb 2022 - Jul 2022)

- Worked on Quantum Simulation project
  (Hamiltonian simulation, Digital Quantum Simulation, Quantum simulation of Optical elements)

Awards / Achievements

- Qiskit Advocate, IBM Quantum (Credential)
- IBM Certified Associate Developer - Quantum Computation using Qiskit v0.2X (Credential)
- IBM Quantum Challenge 2021 & 2022 - Advanced badge
- IBM Quantum Challenge Africa 2021- Advanced badge
- President award in Scouting in the year 2016

Projects

Quantum Gates using Atomic System | (Project GitHub)
M.Sc. Dissertation IIT Roorkee (July 2021 - May 2022)

- Studied neutral atom system for making quantum gates and derived gates matrices
- Simulated different pulse sequences for two-qubit quantum gates and entanglement using Pulser
- Comparing and analyzing different pulse sequences for gates and their fidelity

Golden ticket idea | (Project GitHub)
Qiskit Fall Fest Hackathon IIT Roorkee (Oct 2021)

- Designed a QML program for finding the function of a given image
- Defined and trained a quantum model for extracting Fourier coefficients corresponding to the image using Qiskit
- Extracted Fourier series coefficients for simple 2d image

Skills

Programming languages
Qiskit, Python, C++
More than two-year of experience (including one year professional) of working with qiskit and python.

Software Packages
QuTip, LaTeX, Matlab, Gnuplot

Languages Known
Hindi (Native), English

Time management
Experience working collaboratively in a team, and in a professional environment with strict deadlines and goals.

Problem-solving
Solved problems of scaling and speeding up the output of software QRNG developed using quantum simulations of optical elements at Qulabs.

Additional Courses

1. Qiskit Global Summer School on Quantum Simulations (2022): Certificate of Quantum Excellence - By 'Qiskit, IBM Quantum'
2. Qiskit Global Summer School on Quantum Machine Learning (2021): Certificate of Quantum Excellence - By 'Qiskit, IBM Quantum'
3. Introduction to Quantum Computing: Quantum Algorithms and Qiskit - NPTEL (October 2021) (Credential)
4. Qbronze Diploma: 'Quantum Computing & Programming' workshop, during the 'QWorld Summer School 2021'
5. Qubit by Qubit: Introduction to Quantum Computing (2020-2021) - By 'The Coding School' with IBM Quantum
6. Supervised Machine Learning: Regression and Classification, Coursera course by Andrew NG

Extra Curriculars and Positions of Responsibility

Hindi Ed. Member | Kshitij - The Literary Magazine
Member | NSS IIT Roorkee