RAHUL SINGH

SOFTWARE DEVELOPER

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SUMMARY

Results-driven Software Developer skilled in full-stack development, Python-based quantum frameworks (Qiskit, Cirq, CudaQ), and HPC/GPU integration. Experienced in building scalable scientific web applications with strong focus on performance, usability, and integration of quantum simulators.

PROFESSIONAL EXPERIENCE

Software Developer, CDAC Bangalore   **August 2024 - Present**
- Collaborated with a cross-functional engineering team to develop Qniverse, India's national quantum computing web platform, integrating Qiskit, Cirq, and CudaQ backends.
- Built frontend interfaces for quantum circuit visualization using JavaScript and WordPress.
- Designed REST APIs for circuit transpilation and quantum job execution.
- Integrated GPU-accelerated simulators (Qiskit Aer + cuQuantum) on HPC resources.
- Optimized platform performance and site security on WordPress CMS.

Internship, CDAC Bangalore   **Jan 2024 - June 2024**
- Conducted research on Quantum TSP using QAOA, including Hamiltonian encoding, cost function design, and circuit optimization.
- Studied Quantum Random Walks and Quantum Walk algorithms, comparing performance with classical random walks for graph search.

EDUCATION

Masters of Computer Applications   **November 2022 - July 2025**
Tezpur University | Assam, India

Bachelor of Computer Applications   **August 2019 - July 2022**
Aryabhatta Knowledge University | Patna, India

PROJECTS

Quantum Circuit Composer   **August 2024 - December 2024**
- Interactive drag-and-drop web UI for circuit design using JS + API integration.
- Accelerated Qiskit Aer simulations via cuQuantum (10× speed-up).

Implementation and Comparative Study
Hypercube Search Applications

SKILLS

- Languages: Python, JavaScript (ES6+), HTML5, CSS3, PHP, SQL
- Web: React.js, WordPress CMS, REST APIs, Responsive UI/UX
- Quantum: Qiskit, Cirq, CudaQ, QAOA, QUBO, Hamiltonian Simulation
- HPC: NVIDIA cuQuantum SDK, Qiskit Aer GPU, CUDA Parallelization, HPC Clusters
- Tools: Git, Docker, Jupyter, VS Code, Linux, Postman

ADDITIONAL INFORMATION

- **Languages:** English, Hindi.