Rahul Kumar

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Education

Central University of Himachal Pradesh, MS in Physics   2023 – 2025
- Coursework includes Nuclear and Particle Physics, Quantum Mechanics, Statistical Mechanics, Numerical Methods, and Condensed Matter Physics.

Himachal Pradesh University, BSc in Physics   2020 – 2023
- Coursework includes Linear Algebra, Calculus, Optics, Classical Mechanics, etc.

Technologies

Languages: Python, C, MATLAB, LaTeX, JavaScript, HTML, CSS, Mathematica

Libraries/Frameworks: NumPy, Matplotlib, Pandas, SciPy, OpenCV, DeepFace, Flask

Databases: MySQL, PostgreSQL, SQLite, MongoDB

Tools: Jupyter Notebooks, Git, Simulink

Projects

MIT iQuHACK Hackathon 2025   GitHub Link   January 2025
- Collaborated with a team to develop quantum computing solutions addressing real-world challenges.
- Utilized IBM Quantum and Qiskit tools to implement algorithms for quantum optimization problems.

Face Recognition System   GitHub Link   2024
- Built a real-time face recognition system with Python, OpenCV, and DeepFace, supporting multiple face detection, webcam integration, and DroidCam support.

Computational Physics - Physics-Informed Machine Learning   GitHub Link   2024
- Obtained inverse potential for different partial waves of neutron-proton scattering using reference potential approach(Morse function) and machine learning-based genetic algorithm(GA) optimization.

Certifications

Modeling and Simulation of Dynamic Systems – NPTEL, IIT Roorkee	*2024*
Introduction to Computer Science (CS50) – HarvardX	*2023*
Introduction to Large Language Models (LLMs) – NPTEL	*2025*

Experience

Subject Matter Expert - Advance Physics, Chegg India   October 2023 – Present
- Provide high-quality educational content, ensuring clarity and accuracy in physics explanations

Labelling and Annotation, Remotetask   2023
- Annotated data for machine learning models to ensure high-quality training datasets

Volunteer Experience

Scientific Volunteer, Institute of Plasma Research (IPR) Link   1-week participation
- Participated in outreach programs to promote scientific engagement with the local community.
- Assisted with scientific presentations and demonstrations to increase awareness of plasma research and its applications.
- Collaborated with the IPR team to facilitate educational workshops on advanced scientific topics.