

Soumen Kumar

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Education

Indian Institute of Technology, Jodhpur

Oct. 2022 – May 2026

B.Tech in Computer Science and Electrical Engineering - CGPA - 8.78

Jodhpur, Rajasthan

Experience

CybraneX

December 2024 – Present

Quantum Developer Intern

Remote


- **Conducting research** on **Quantum Hardware Systems**, leveraging **Qiskit** and **IBM Quantum Environment** to design and simulate quantum circuits for hardware optimization and algorithm implementation.
- **Exploring** the implementation of **quantum computing in optimization problems**, developing efficient quantum algorithms to tackle combinatorial challenges and real-world scenarios.
- **Implementing Quantum Machine Learning (QML)** algorithms, utilizing **CUDA-Q** for accelerating quantum simulations and enhancing classical machine learning models.

Projects

Cancer Diagnostic App  | Project under(IITJ-AIIMSJ)

October 2024 -Present

- **Developed** a cancer diagnostic app for NSCLC using **Kotlin** and **XML**, incorporating NCCN guidelines for accurate diagnosis and personalized treatment plans.
- **Integrated Firebase Authentication, Firestore DB, and Firebase Storage** to securely manage user data and store diagnostic images.
- **Built** a scalable framework for easy expansion to include other cancers, empowering healthcare professionals with an evidence-based decision support tool.

MedSync - Pharmacy Management Platform  | Course Project

September 2024 - November 2024

- **Developed** a platform connecting patients to the IITJ PHC Pharmacy, enabling medicine browsing, ordering, and tracking with a user-friendly interface.
- **Built** an admin panel for analytics, stock management, and user communication, enhancing operational efficiency.
- **Integrated React** (Frontend) and **Firebase** (Firestore, Firebase Auth) with custom authentication and Google Sign-In for real-time updates, secure payments via UPI, and seamless data handling.

People Entry/Exit Detector  | Self Project

June 2024 - August 2024

- **Developed** a real-time people counting system for stores and malls, accurately tracking over 500 entries/exits per hour.
- **Optimized performance** by 25% through threading, ensuring real-time operation for high-traffic areas using computer vision techniques.
- **Achieved 95% accuracy** in detection using **OpenCV, MobileNetSSD, and CNN**.

Technical Skills

Languages: C/C++, Python, R, HTML/CSS, JavaScript, SQL, Kotlin, XML

Developer Tools: VS Code, PyCharm, MATLAB, Firebase, Android Studio, R-Studio

Technologies/Frameworks: Linux(Ubuntu), Git, Github, Scikit-Learn, OpenCV, Numpy, Pandas, Scipy, Matplotlib

Relevant Coursework

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|-----------------------|--------------------------|-------------------------|---------------------------|
| • Data Structures | • Database Management | • Operating Systems | • Computer Networks |
| • Machine Learning | • CyberSecurity | • Computer Architecture | • Intro to CS and OOPS |
| • Algorithms Analysis | • Probability Statistics | • Cryptography | • Engineering Maths(I/II) |

Achievements

- Department Rank 3 in B.Tech CS+EE
- Got 3rd Prize(Project Demonstration) in Industry Day-2024@IITJ.
- Part of IITJ Team in ISRO-URC 24
- Expert@CodeForces(Rating-1603)

Positions of Responsibility

- Development Head @ Akshar IITJ
- Executive @ ES Board of Departmental Societies
- Member @ Quiz Society IITJ