Mayank Jonwal

✉ jonwal.1@iitj.ac.in   📱 +91 9625401776   in [LinkedIn](#)   ⭘ [mayankjonwal02](#)

EDUCATION

Indian Institute of Technology, Jodhpur   December 2021 – May 2025
B.Tech in Artificial Intelligence & Data Science

WORK EXPERIENCE

Backend Development Engineer (Intern)   Dec 2024 – March 2025
AlphaData Labs   *Remote*

- Developed and maintained backend services handling **20K+** daily API requests .
- Optimized operations by reducing response latency by **30%** using Redis caching and implemented Langchain Agents for automated workflow processing.
- **Technologies:** MySQL, MongoDB, NodeJs, ExpressJs, SpringBoot, PHP, Redis, RESTful APIs

AI Backend Development Engineer (Intern)   Mar 2024 – July 2024
WebAI Solutions   *Remote*

- Architected microservices for food delivery platform serving **5,000+** daily users, reducing system downtime by **75%** .
- Integrated GPT-4 via LangChain for contextual response generation and designed a scalable microservice to handle **100k+** daily chat messages.
- **Technologies:** MySQL, MongoDB, NodeJs, ExpressJs, SpringBoot, Django, Redis, Docker

Undergraduate Researcher   Mar 2023 – May 2025
CSE Department, Systems Lab - IIT Jodhpur

- Leading research under Dr. Sumit Karla focusing on AI integration in healthcare systems, system design, and IoT for medical applications.
- Developed two production-grade healthcare solutions (IVR System & SURVIC Trial) deployed across multiple AIIMS hospitals nationwide.
- Designed distributed system architecture that enabled secure handling of **5000+** patient records while maintaining **99.99%** data integrity.

PROJECTS

IVR - Interactive Voice Response System for Healthcare
Collaboration: IIT Jodhpur & AIIMS Jodhpur

- Architected an AI-powered IVR system using LLM-based reasoning for patient communication about implant removal schedules with **98%** accuracy.
- Implemented secure static IP-based intra-network communication for hospital backend integration with automated Call and SMS notification system.
- **Technologies:** Kotlin, NodeJS, ExpressJS, MySQL, Apache, Redis, LangChain, OpenAI API

SurVIC Trial - Multi-Center Oncology Research Platform

Collaboration: IIT Jodhpur & 7+ AIIMS Institutes

- Built a scalable backend platform for an ICMR-sponsored multi-center oncology trial handling medical data of **5000+** patients.
- Implemented AI-powered decision support using LLMs for protocol compliance and data validation with automated report generation.
- **Technologies:** NextJS, NodeJS, MongoDB, AWS, LangChain, OpenAI GPT-4

Facial Verification System
Collaboration: RapidRadio Solutions & IIT Jodhpur Library

- Engineered a production-grade facial verification system using deep learning for secure access control with **99.7%** accuracy.
- Designed real-time processing APIs with FastAPI and containerized the application using Docker for cross-platform deployment.
- **Technologies:** Python, FastAPI, Docker, TensorFlow, PyTorch, LangChain, Redis

TECHNICAL SKILLS

- **Programming:** Python, TypeScript, JavaScript, Java, Kotlin
- **Backend Development:** NodeJS, ExpressJS, Django, SpringBoot, FastAPI
- **Frontend Development:** ReactJS, NextJS, Angular , Tailwind CSS
- **Cloud & DevOps:** GCP , Docker, Jenkins, GitHub Actions
- **Databases:** MySQL, PostgreSQL, MongoDB, Redis, Firebase
- **AI & ML:** LangChain, LangGraph, AutoGen, CrewAI, OpenAI API, HuggingFace , Ollama
- **System Architecture:** Microservices, Event-driven
- **Messaging & Streaming:** Kafka, RabbitMQ, WebSockets-WebRTC , LiveKit

Research & Achievements

- **Research Paper:** "Talking Gloves: Novel Approach for Post-Laryngectomy Communication using IMU-based Gesture Recognition" - Under Review, IEEE Robotics and Automation Letters
- **Research Paper:** "EEG Signal Processing for Wheelchair Control: A Comparative Analysis of Classification Techniques" - Submitted to International Conference on Biomedical Robotics and Biomechatronics
- **Research Paper:** "Graph-Based Network Analysis for Optimizing Navigation in Healthcare Robotics" - In preparation for submission to ICRA 2026
- **Hackathon Winner:** 2nd Position at Neuroscience Hackathon'25, IIT Jodhpur - Gesture-controlled Wheelchair project

RELEVANT COURSEWORK

Software & Data Engineering, Virtualization & Cloud Computing, Deep Learning