

Suryansh Sharma

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🔗 Portfolio Website

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EXPERIENCE

IIT Mandi (SCEE) - (Machine Learning Engineer Intern)

Jun. 2025 - Sep. 2025

- o Built Deep Learning model pipelines from multi-sensors **raw breath data**, converting sensor signals into **spectrograms**, and applying deep learning models to classify patients and generated synthetic data using **GANs** to address class imbalance.
- o Executed another deep learning pipeline to classify diabetes using breath data features, optimized model performance to **87%** accuracy and successfully integrated the system for **real-time diagnosis** at **AIIMS Bilaspur**.

IIT Mandi (IKSMHA) - (Research Intern)

Jun. 2024 - Sep. 2024

Received LOR [🔗](#)

- o Developed a robust **EEG analysis** framework in Python to investigate brain connectivity in the time–frequency domain, handling over 100 GB of physiological sleep data.
- o Performed comprehensive EEG analysis using MNE-Python, including signal filtering, ICA-based artifact removal, built reusable Python scripts to standardize the data processing workflow for the research team and analyzing **ERPs** (P300, N200, FRN) and Power Spectral Density (PSD) on experimental cognitive load and mind wandering data.

TECHNOLOGIES

Languages: C++, C, Python, HTML, CSS, JavaScript, TypeScript.

Frontend and Databases: - React.js, Tailwind CSS, MySQL, PostgreSQL, MongoDB.

Backend and System Design - Node.js, Express, Django, Flask, REST APIs, GraphQL, Websockets, Redis, Kafka ,Nginx, JWT.

Deployment and Testing - Git, Docker, Kubernetes, CI/CD(GitHub Actions), AWS(EC2, S3, Lambda), GCP(Cloud Run, Firebase), Hugging Face Spaces, Vercel, Render, Unit testing, Postman, Insomnia, Linux

AI/ML and GenAI Frameworks - LangChain, LangGraph, PyTorch, TensorFlow, Scikit-learn, RAG Pipelines.

PROJECTS

Price Pilot - React / MongoDB / **Flask** / **Scrapy** / **Playwright**

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- o **Engineered** "Price Pilot," an LLM-powered e-commerce analyst that aggregates multi-platform data to deliver "Buy/No-Buy" verdicts, reducing user research time by approximately 70%.
- o Designed a distributed **scraping architecture** using Python (**Playwright**) **microservices** to fetch real-time pricing and review data from Amazon/Flipkart, bypassing anti-bot measures via stealth techniques.
- o Applied an NLP pipeline using the Gemini LLM augmented by **Phi-3** LLM to synthesize thousands of unstructured reviews into qualitative insights (Sentiment, Reliability Score, Pros/Cons) stored in MongoDB.
- o Established an automated **CI/CD pipeline** to deploy **Dockerized** backend microservices to **Hugging Face Spaces** and the frontend to **Vercel**, ensuring rapid iteration and zero-downtime updates.

AI Travel Planner (IntelliTrek) - React / Node.js / **Redis** / **Kafka** / **Socket.io** / **Firebase**

Live [🔗](#) Github [🔗](#)

- o **Engineered** a comprehensive travel logistics platform to generate personalized, day-by-day itineraries using AI, reducing trip planning time by **80%** and integrating Generative AI (LLMs) with interactive geospatial data pipelines.
- o Designed an event-driven architecture where the core API offloads time-consuming flight price tracking to an asynchronous **Kafka** producer/consumer system, preventing main-thread blocking and ensuring zero latency for user requests.
- o Architected a scalable backend using **Node.js (Express)** to orchestrate data ingestion from generative sources (Gemini), live location services (**Google Places API**), and high-speed caching layers (**Redis**).
- o Enforced real-time collaborative planning features using **WebSockets** and **Redis Pub/Sub**, allowing multiple users to edit itineraries simultaneously with optimistic UI updates. Managed distributed state and concurrency locks to ensure data consistency.

Face Recognition Attendance System - Python / Computer Vision / **DeepFace** / **Dlib** / OpenCV

Github [🔗](#)

- o Developed a **real-time** attendance system using 128D facial embeddings to ensure high-accuracy, reliable identification.
- o Implemented **anti-spoofing** and liveness detection using **DeepFace**, preventing fraudulent check-ins from static photos or videos.

EDUCATION

JawaharLal Nehru Government Engineering College, Himachal Pradesh

Sep 2022 - May 2026

Bachelor of Technology in Computer Science (AI/ ML)

CGPA - 7.36

ACHIEVEMENTS

Problem Solving [GFG](#) [🔗](#) [Leetcode](#) [🔗](#) DSA problem solved

Smart India Hackathon - Secured 1st place at the college-level.