

# Archit Badoni

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[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

## Professional Summary

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Third-year B.Tech (AI & ML) student with hands-on experience building production-grade AI systems and scalable backend services. Strong background in Machine Learning, Computer Vision, and API development using FastAPI, PostgreSQL, and modern LLM stacks. Focused on building reliable, enterprise-ready AI solutions with measurable real-world impact.

## Education

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**Manipal University Jaipur**

Aug 2023 – May 2027

B.Tech in Computer Science Engineering (AI & ML)  
CGPA: 7.38

## Technical Skills

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**Languages:** Python, SQL, C++, JavaScript

**AI / ML:** PyTorch, Hugging Face, OpenCV, YOLOv8, DeepFace, NumPy, Pandas, Statistics

**Backend / Web:** FastAPI, REST APIs, WebSockets, React, TailwindCSS

**Databases:** PostgreSQL, Oracle SQL, Database Design

**Tools:** Docker, Git/GitHub, OOP, DSA

## Projects

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### Document Summarization & Video Generation API

*Production-ready*

**AI System Summary:** Built a production-grade REST API for intelligent multi-format document summarization with automated video generation and enterprise-level controls.

- Multi-provider LLM pipeline using Groq LLaMA 3.1, Ollama, and Google Gemini with intelligent fallback (~95% confidence).
- Automated video generation using Manim animations with Edge TTS / ElevenLabs narration.
- FastAPI + PostgreSQL backend with async workers, API key authentication, rate limiting (120 req/min), and secure video downloads.
- Dockerized deployment with logging, pytest-based async testing, and resource cleanup policies.

**Tech:** Python, FastAPI, PostgreSQL, Groq API, Gemini, Manim, Docker

[GitHub Repository](#)

### FloatChat AI — Oceanographic Data Intelligence Platform

*Full-Stack*

- Built a platform processing 122,000+ ARGO measurements for interactive visualizations and NLP-based scientific queries.
- FastAPI + PostgreSQL backend with normalized NetCDF ingestion and optimized time-series queries.
- Streamlit dashboard with Plotly visualizations; deployed on Railway and Streamlit Cloud.

**Tech:** Python, FastAPI, PostgreSQL, Pandas, Streamlit, Plotly, Hugging Face

[Live App](#) | [GitHub Repository](#)

### Universal Home Organization AI

*Computer Vision*

- Developed a real-time home organization system using YOLOv8 and OpenCV for object detection and classification.
- Flask REST API with React frontend for live visualization and spatial categorization.

**Tech:** Python, YOLOv8, OpenCV, Flask, React

[GitHub Repository](#)

### Interview Mirror — AI-Powered Interview Coaching Platform

*Full-Stack / Computer Vision*

Jan 2025 | Team Project (4 members)

- Built a real-time AI interview coaching system using MediaPipe Holistic to track 543 body landmarks for posture, stress, gesture, and gaze-based integrity analysis.
- Designed four behavioral analyzers (Posture, Stress, Gesture, Integrity) with signal smoothing (One Euro Filter) to achieve ~15 FPS processing with <100ms latency.
- Integrated Google Gemini for NLP-driven feedback, fusing vision metrics with text signals into a scoring engine with strict rubrics.
- Developed full-stack features: FastAPI backend with async WebSocket streams, React + TypeScript frontend, caching, and robust error handling.
- Achieved production-level performance:  $\geq 95\%$  pose detection accuracy and  $\geq 90\%$  gesture recognition; reduced API quota usage by 40% through intelligent caching.

**Tech:** Python, MediaPipe Holistic, OpenCV, FastAPI, WebSockets, React, TypeScript, Tailwind CSS, Google Gemini

## Certifications

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- **Database Design** — Oracle Academy (Nov 2024)
- **Database Programming with SQL** — Oracle Academy (Nov 2024)
- **Data Structures and Algorithms** — CodeChef (Nov 2024)
- **Python Essentials 1 & 2** — Cisco Academy (Oct 2024)