

Padmanabh Kulkarni

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Education

Walchand Institute of Technology

Bachelor of Technology in Electronics and Computer Engineering

CGPA: 9.56/10

November 2022 – June 2026

Shanti Jr College of Science

Higher Secondary Certificate (HSC)

Percentage: 90.1%

2021

Kendriya Vidyalaya Solapur

Secondary School Certificate (SSC)

Percentage: 95%

2019

Experience

Backend Developer Intern – Soul Yatri

December 2025 – Present

- Architected and delivered a production-grade **NestJS** REST backend across **15 feature modules** (15,000+ lines), covering auth, therapy session lifecycle, payments, video calling, courses marketplace, careers, wellness, blog/CMS, admin, and real-time WebSocket notifications, designed **31 PostgreSQL models** via **Prisma ORM**.
- Integrated **Razorpay**, **Cloudflare RealtimeKit**, and **Google OAuth 2.0**; engineered a two-layer cache (**LRU + Redis**) and role-based rate limiting across **100+ REST endpoints**.

Key Projects

AutoDiary: AI-Powered Lifelogging System

November 2024 – April 2026

- Architected an end-to-end **RAG pipeline** on a **Flask** backend integrating **Gemma-3 4B** (vision captioning), **Whisper** (speech-to-text at **91% accuracy**), and **Qwen 0.6B** embeddings; stored vectors in **ChromaDB** with top-5 similarity retrieval staying **sub-second at 1500+ documents** and streamed context-aware **LLM** responses.
- Built an **event-driven multimodal ingestion pipeline** on **ESP32-S3** transmitting timestamped captures over Wi-Fi to Flask with asynchronous background AI processing, achieving sub **-10s** end-to-end image latency.
- Containerized the full AI stack using **Docker** with volume-persisted model weights; implemented **session-based auth**, **SQLAlchemy** ORM data modelling, and a chat-based web UI for natural-language diary querying.

Migcon Connect

June 2025 – March 2026

- Built a scalable IoT backend platform using **NestJS** and **MongoDB**, ingesting high-frequency telemetry from **500 devices** via **secure MQTT over WebSockets (WSS)** with sub-200 ms end-to-end processing latency.
- Designed and implemented **15+ RESTful APIs** for device lifecycle management, telemetry aggregation, and role-based user access control, reducing redundant queries by **40%** and improving backend scalability under load.
- Automated **CI/CD pipelines** using **GitHub Actions** and containerized services with **Docker**, accelerating release cycles by **80%** and integrating the **ELK Stack** for centralized logging and **50% faster** production issue resolution.

Nimittam: On-Device Multimodal AI Assistant

July 2025 – August 2025

- Integrated **Gemma 3n** (2B/4B variants) via **MediaPipe GenAI API** for fully **on-device multimodal inference** (text + image), enabling real-time multilingual Q&A, landmark recognition, and OCR-based translation across **13+ Indian languages** with **zero cloud calls**.
- Designed a **multimodal prompt pipeline** combining vision-language embeddings with free-form natural language queries; architected for future **LoRA fine-tuning**.

Technical Skills

Languages & Frameworks: Python, C++, JavaScript, TypeScript, SQL, React.js, Flask, Node.js, NestJS

Cloud & DevOps: AWS, Docker, Kubernetes, GitHub Actions, Linux

Databases: MongoDB, MySQL, ChromaDB, Pinecone, Redis, SQLite, PostgreSQL

AI & LLM: LLMs & Embeddings, RAG Pipelines, Prompt Engineering, LangChain, Claude Code

ML Libraries: NumPy, Pandas, Scikit-learn, TensorFlow

Achievements & Additional Information

- Competitive Coding:** Codeforces Rating **1671** (Global Rank **310**, Round 1032 Div. 3); CodeChef Rating **1622** (Global Rank **49**, STARTERS165C Div. 3)
- Certifications:** Software Engineering, Machine Learning – DeepLearning.AI, TensorFlow: Advanced Techniques
- Languages:** English (Fluent), Hindi (Native), Marathi (Native), German (A1)