SEJAL MUKANE
Software Engineer

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PROJECTS

FinSupportLM : Repository_link (Ongoing)   **Jan 2026 –Present**

A compliance-aware fintech decision engine powered by a custom-built Small Language Model (SLM) and policy-grounded RAG pipeline for structured support automation (UPI, refunds, KYC, grievance escalation).
- Architecting a ~9–10M parameter decoder-only Transformer (PyTorch) with RoPE, RMSNorm, and SwiGLU
- Implementing instruction-based multi-task learning for structured outputs: intent, priority, SLA, escalation + controlled generation
- Designing a decision-first architecture with rule validation and conversational state tracking
- Building a policy-grounded RAG pipeline (Sentence-Transformers + FAISS) to ensure low-hallucination, compliant responses
- Optimizing training using Gradient Accumulation and Mixed Precision (AMP) on limited hardware

Ephemra : Repository_link (ISRO SIH 2025 Problem Statement)   **Nov 2025 – Dec 2025**

Developed a time-series forecasting system for the official ISRO using GNSS ephemeris datasets provided by ISRO to predict satellite orbit and clock errors.
- Implemented and benchmarked Time-Series Transformer models for 15-minute interval error prediction
- Designed temporal preprocessing and sequence modeling pipelines for robust forecasting
- Built a FastAPI inference backend for real-time predictions across GEO and MEO satellites
- Developed a Next.js dashboard for satellite-wise prediction visualization and trend analysis

WorkAlign : Repository_link   **Nov 2025 - Dec 2025**

Developed an AI-powered recruitment intelligence platform for automated resume parsing, semantic matching, and candidate ranking.
- Architected FastAPI-based microservices integrated with Gemini API for structured resume extraction and NLP-driven job relevance scoring
- Implemented an embedding-based similarity pipeline for candidate ranking and semantic job matching
- Built a Next.js frontend with MongoDB-backed data models to support recruiter workflows and candidate lifecycle management

AdCentrix : Repository_link   **Sept 2025 - Oct 2025**

Built an AI-powered multi-channel marketing automation platform for generating data-driven ad creatives across Instagram, Facebook, and Google Ads.
- Integrated Gemini API for intelligent ad copy generation and Hugging Face diffusion models for AI-based image creation
- Engineered a dynamic prompt pipeline using Pytrends (Google Trends API) to inject real-time market signals into creative generation
- Developed a FastAPI backend for orchestration and a Next.js frontend for campaign management and content visualization

TECHNICAL SKILLS

- **Programming :** Python, JavaScript, TypeScript, SQL, HTML, CSS
- **Frameworks :** React.js, Next.js, TailwindCSS, FastAPI, Node.js, Pandas, Numpy, ScikitLearn, Matplotlib,Seaborn
- **Deep Learning & AI :** PyTorch, Transformers, Large Language Models (LLMs), NLP, RAG
- **Vector Search & LLM Tools :** Sentence-Transformers, FAISS, Hugging Face, LangChain
- **Databases :** MongoDB, MySQL
- **Tools :** Git, GitHub, Postman, Docker

Achivements and Certificates

- **Hack-Deck 2.0 Winner (AI/ML) —** 1st place among 125 teams, Atharva University. certificate   **Jan 2026**
- **IEEE Publication (2025):** *SwiftShip — Delivery Time Slot Prediction using ML.* certificate   **April 2025**
- **Deloitte Data Analytics Job Simulation —** Forage. certificate   **March 2025**
- **Full Stack Web Development Internship —** Edureka. certificate   **Oct 2024**

EDUCATION

- **Bachelor of Engineering in Computer Engineering** - University of Mumbai (Pursuing)   **2023 - 2027**
- **Higher Secondary Education** - Maharashtra State Board (Science)   **2021 - 2023**