Ganesh Kumar

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SUMMARY

AI/ML Engineer specializing in production-ready biometric authentication and generative AI solutions. Proven track record of deploying models that handle 1000+ daily authentications with measurable accuracy improvements. Experienced in end-to-end ML lifecycle—from research and fine-tuning to deployment and monitoring—across banking, healthcare, and insurance domains. Passionate about building scalable, efficient AI systems that solve real-world problems.

SKILLS

Programming: Python, SQL,

Visualization & Analytics: Power BI, Tableau

ML/AI Frameworks: PyTorch, TensorFlow, Hugging Face Transformers, LangChain, LangGraph, Autogen, CrewAI

Specializations: Computer Vision, NLP, Fine-Tuning, RAG Systems, AI Agents, Agentic AI

Vector Databases: Qdrant, Weaviate, Neo4j, Faiss, Chroma, ObjectBox

Tools & Platforms: CI/CD, FastAPI, Docker, Git, ONNX, Ollama, Groq, Gemini API, Pydantic Model

EXPERIENCE

Kaizen Secure Voiz Pvt Ltd | *ML Engineer — Chennai*   Mar 2024 – Present

Computer Vision & Biometric Systems

- Developed and deployed AI-powered authentication products including Face Biometrics, Liveness Detection, and Text Authentication
- Deployed ViT-based Face Authentication engine with 15% accuracy improvement, processing 1000+ daily authentications
- Built Liveness Detection using eye-blink and lip-sync analysis, achieving 75% spoofing prevention at 30 FPS
- Developed Sign Language Recognition (ASL/ISL) with YOLOv8, improving accessibility in authentication workflows
- Optimized Face Recognition SDK with ONNX/OpenVINO for 2.5× faster inference and edge deployment

NLP & Generative AI

- Created NER pipeline with fine-tuned transformers and LangChain, achieving 90% accuracy and automating 80% data entry
- Built RAG-based chatbot using LangChain and ObjectBox for insurance data retrieval with contextual Q&A
- Implemented Text Authentication system with multi-factor verification for banking clients

MLOps & Deployment

- Established CI/CD pipelines with DevOps teams for model deployment in production environments
- Implemented monitoring workflows maintaining 80%+ accuracy across deployed systems

EDUCATION

Manipal Institute of Technology   Mar 2023 – Jan 2024
Post Graduate Certificate Program in Data Science and Machine Learning

Annamalai University   Aug 2017 – Sep 2022
M.Sc. Geology

PROJECTS

Doctor Appointment Multi-Agent System

- Designed and implemented a multi-agent system for automated doctor-patient appointment scheduling using Supervisor Multi-Agent architecture.
- Developed modular agent workflows and an AI-driven decision engine to optimize real-time scheduling and appointment allocation.
- Built an interactive Streamlit UI for simulation and testing, ensuring scalability, maintainability, and workflow efficiency.