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SUMMARY

GenAI Full Stack & Backend Developer and Computer Engineering Graduate with experience building multi-agent AI systems, REST APIs, and ML-powered applications using Python, Google ADK, FastMCP, FastAPI, Flask, PostgreSQL, ChromaDB, and LLM frameworks. Built production-ready AI agents featuring MCP servers, long-term memory, human-in-the-loop approval, and Streamlit dashboards. Skilled in AWS, Docker, Git, software engineering practices, and end-to-end AI application development.

SKILLS

- **AI Agents & LLMs:** Google ADK, FastMCP (MCP Server), ChromaDB (RAG), LangChain, Prompt Engineering
- **Languages:** Python, SQL, JavaScript (basic), HTML, CSS
- **Backend & APIs:** FastAPI, Flask, REST API Design, OOP, Design Patterns, DSA, Pydantic, Swagger
- **Data Science :** Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, PySpark, PyTorch, TensorFlow
- **Machine Learning:** Regression, Classification, Clustering, XGBoost, SHAP, SMOTE, Anomaly Detection, Risk Modeling
- **Visualization & BI:** Power BI, Streamlit, Excel , DAX, Power Query
- **Databases:** MySQL, PostgreSQL, Oracle, ChromaDB (Vector DB), Supabase
- **DevOps Tools & Other:** AWS (EC2, S3), Docker, Git/GitHub, CI/CD, Postman, Agile, Unit Testing, Postman, SDLC

PROJECTS

1. Sales Pipeline Agent — AI Multi-Agent System ■ Kaggle AI Agents Competition 2026

Tech: Google ADK | FastMCP | Gemini 2.0 Flash | ChromaDB | Streamlit | Python | RAG | Docker

- Built a 4-agent pipeline (LeadResearcher → LeadScorer → OutreachDrafter → ReviewerAgent) using Google ADK that researches companies, scores leads 0-100, drafts personalized cold emails and LinkedIn messages in ~13 seconds
- Designed MCP Server with FastMCP as a separate CRM microservice exposing 4 tools (add_lead, get_leads, update_status,timeline), demonstrating production service-oriented architecture.
- Implemented ChromaDB long-term vector memory with RAG — stores lead embeddings, recalls similar past leads as context for improved research quality.
- Built enterprise security suite: DLP output scanner, input sanitizer blocking prompt injection, ISO-8601 audit logging, and environment-variable-only API key management. Zero hardcoded secrets.
- Delivered 6-page Streamlit dashboard: live pipeline runner, CRM dashboard, priority ranking view, production monitoring, memory explorer, and per-agent Gantt-style execution traces.
- GitHub: <https://github.com/mahadev19/sales-pipeline-agent> | Demo: https://youtu.be/bjvdql9NLgs?si=JUzZRsr0_A72PPjw

2. Insurance Premium API (FastAPI + PostgreSQL)

Tech: Python | FastAPI | Scikit-learn | Streamlit | Docker | AWS EC2 | Pydantic

- Built a machine learning API to predict insurance premium categories (Low / Medium / High) based on user health, lifestyle, and demographic data.
- Engineered features including automated BMI calculation, lifestyle risk scoring, and city-tier classification to improve model input quality.
- Designed and exposed a RESTful API using FastAPI with Pydantic schema validation and auto-generated Swagger documentation. Designed and executed test cases/scenarios for API validation and model accuracy checks
- Developed an interactive Streamlit frontend that collects user input and displays prediction results with confidence scores and class probabilities. And containerized the full application using Docker and deployed it on AWS EC2, implementing a complete ML pipeline from training to cloud production.

3. Real-Time Scream Detection & Alert System (Flask + ML)

Tech: Python | Flask | TensorFlow | Keras | ResNet34 | PostgreSQL | PyAudio | WhatsApp API | JavaScript

- Built a real-time audio classification web app that detects human screams from both uploaded audio files and live 5-second microphone recordings.
- Trained a deep learning classification model using TensorFlow/Keras with a ResNet34 architecture on mel-spectrogram audio features.
- Automated WhatsApp emergency alerts with the user’s live GPS location upon scream detection, enabling real-world safety use cases. And logged all detection events including confidence score, timestamp, latitude, and longitude to a PostgreSQL database for audit and analysis.
- Implemented user authentication (signup/login), an admin dashboard for reviewing, filtering detection history, and saved audio playback. "Documented system architecture using flowcharts and diagrams covering audio pipeline and alert flow"

4. Gmail Outreach Automation System | Python, Streamlit, Supabase, CrewAI

Tech: PostgreSQL | Groq LLM | Gmail SMTP | IMAP | A/B Testing

- Built a production-grade multi-user email outreach platform in Python + Streamlit sending up to 2,000 personalized emails/day via Gmail SMTP with anti-spam delays, retry logic, and per-user Supabase PostgreSQL backend.
- Integrated CrewAI + Groq LLM agents to auto-generate personalized email templates and developed a 48-hour intelligent follow-up engine using Gmail IMAP that detects replies and bounces before sending.
- Implemented Gmail IMAP inbox scanner using header-only fetch for real-time reply and bounce detection, and MX record DNS validation on upload to remove undeliverable emails before sending.
- Designed email warm-up scheduler enforcing daily limits from 20→2,000 emails over 18 days to protect sender reputation, plus A/B testing system that splits contacts across two subject lines and tracks reply rates per variant/
- Built 10-page Streamlit dashboard with campaign history, 6 real-time analytics cards, 5 filtered contact lists, per-campaign Excel export, user authentication with SHA-256 hashing, and complete data isolation per user.

EDUCATION

Bachelor of Technology (Computer Engineering) - Vilasrao Deshmukh Foundation Group Of Institutions, Latur
Nov 2021 – Oct 2025 CGPA: 7.95/10.0

Relevant Coursework: Data Structures, Cloud Computing, Machine Learning, DBMS, Software Development

CERTIFICATIONS

- Certified Data Science Professional (Jul 2025) - AI Adventures, Pune