Konda Balaji Rao

AI & Full Stack Engineer

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SUMMARY

Results-driven AI & Full-Stack Engineer proficient in Python, SQL, and modern ML frameworks. Experienced in building production-grade ML and RAG systems, automating data pipelines, and delivering data-driven solutions that improve operational efficiency and decision-making.

EDUCATION

B.Tech in Computer Science and Engineering (AIML) | **Vignan's Foundation for Science, Technology and Research**

- CGPA: 7.50

Intermediate | **Sri Chaitanya Junior College**

Jan 2018 – Jan 2020

- CGPA: 9.54

SSC | **Z.P. High School**

Jan 2018 – Jan 2018

- CGPA: 9.58

SKILLS

Technical Skills: Programming: Python, JavaScript, TypeScript, SQL, C, HTML, CSS

Libraries & Frameworks: TensorFlow, Keras, PyTorch, Scikit-learn

Databases & Tools: PostgreSQL, Redis; Docker, AWS (EC2, S3, Lambda), FastAPI, Git, GitHub, VS Code, Google Colab

Soft Skills: Problem Solving, Adaptability, Teamwork, Leadership, Time Management

PROJECTS

HeartGuard AI – Medical AI Chatbot

- Developed a production-grade medical AI chatbot using LangGraph-based multi-agent orchestration.
- Reduced medical query response time by 60% and achieved 95%+ answer accuracy using a self-correcting RAG pipeline with vector search.
- Implemented secure data handling with real-time PII removal, authentication, and encryption.
- Enabled persistent session memory using Redis and PostgreSQL for context-aware conversations.

Technologies Used: Python, LangGraph, Neo4j, Redis, PostgreSQL
GitHub: github.com/9046balaji/Heart

PDF Tools – Document Management Platform

- Built an enterprise PDF platform supporting conversion, merge, split, compression, and OCR.

- Reduced manual document handling time by 75% using asynchronous background processing with Celery and WebSockets.
- Implemented secure workflows with AES-256 encryption, watermarking, and digital signatures.

Technologies Used: Python, Celery, Redis, WebSockets, OCR, AES Encryption
GitHub: github.com/9046balaji/Pdf-Tools

Hospital Management System

- Developed an automated appointment booking and scheduling system to prevent double bookings.
- Implemented conflict-detection and optimized scheduling logic to improve resource allocation.
- Increased administrative efficiency by 50% using secure REST APIs and role-based access controls.

Technologies Used: Node.js, PostgreSQL, JWT, Redis, REST APIs
GitHub: github.com/9046balaji/Hospital-Management-System

Heart Disease Prediction System

- Trained ensemble models (XGBoost, LightGBM) with Optuna tuning to achieve 92%+ ROC-AUC.
- Improved minority-class recall by 25% using ADASYN and class-balancing techniques.
- Deployed the model using FastAPI and provided SHAP-based explanations for clinical interpretability.

Technologies Used: Python, XGBoost, LightGBM, Optuna, SHAP, FastAPI
GitHub: github.com/9046balaji/collage-projects

Computer Vision & Deep Learning Projects

- Developed image classification and similarity-detection systems using transfer learning (VGG16).
- Implemented edge detection and texture-analysis pipelines using Canny, Sobel, and GLCM.
- Achieved production-grade accuracy on targeted image-processing tasks.

Technologies Used: OpenCV, TensorFlow, VGG16, CNN
GitHub: github.com/9046balaji/collage-project