Hemachand Ravulapalli

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github.com/HemachandRavulapalli | hemachand-portfolio.vercel.app

Technical Skills

Programming Languages: Python, Java, C, JavaScript

Frameworks & Tools: Django, React.js, Spring Boot, Flask, Tableau, Git, GitHub, VS Code, Orange, SQL Server Management Studio

Databases: MySQL, MongoDB

Core Concepts: Data Structures Algorithms, Web Development, Natural Language Processing (NLP), Artificial Neural Networks (ANN)

Education

Seshadri Rao Gudlavalleru Engineering College 2022 – 2026
Bachelor of Technology in Computer Science & Engineering *CGPA: 8.63*

Narayana Junior College 2020 – 2022
Intermediate Education, MPC *Percentage: 93%*

Projects

Noise-Robust ECG Arrhythmia Classification | Python, OpenCV, PyTorch, TensorFlow 2025

- Developed an end-to-end AI pipeline for detecting cardiac arrhythmias in 6-lead ECG PDFs/images and transforming reports into analyzable ECG signals.
- Built an efficient noise reduction framework with multiple stages and trained hybrid machine learning and CNN models using ensemble fusion for reliable predictions.
- Achieved **92.7%** clinically weighted accuracy, optimized for real-time deployment.

Farm Management System | JavaScript, HTML, CSS, REST APIs, MongoDB 2024

- Built a web-based application providing personalized crop recommendations by analyzing soil, climate, and input parameters, improving crop productivity by 30%.
- Implemented monitoring modules for crop growth and deficiency detection, reducing manual effort by 25%.
- Applied modular architecture and database optimizations to ensure scalable and secure data storage.

Cornell Movie Chatbot | Python, Pandas, Gradio, Hugging Face, NLP 2023

- Engineered and deployed a natural language chatbot trained on 220,000+ Cornell Movie Dialogues, attaining over 95% response accuracy.
- Designed query handling with exact matches, randomized responses, and fallback systems; planned enhancements include fuzzy matching and multi-turn conversations, boosting engagement 40%

Movie Analytics Using Clustering and OLAP | K-Means, DBSCAN, Orange, SQL Server 2023

- Performed clustering (K-Means, Hierarchical, DBSCAN) n movie datasets to evaluate revenue vs advertising spend for ROI-based segmentation
- Created OLAP cubes and star/snowflake schemas for multidimensional analysis of datasets.
- Produced data cleaning and visualization workflows to support marketing and audience targeting strategies.

Certifications

- Industrial Internet of Things (IoT) – NPTEL, 2023
- Introduction to Data Science with Python – HarvardX, 2023