Hema Sai Eswar Reddy Jambula

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Summary

Master's student in Computer Science with strong hands-on experience in Python, Excel VBA automation, and data-driven application development. Proven ability to design, debug, and optimize scalable workflows handling large datasets and multi-step computations. Strong focus on clean code, maintainability, and performance optimization.

Education

University of Oklahoma Aug 2024 – May 2026
Master of Science in Computer Science — GPA: 3.83/4.0 *Norman, OK*

Sathyabama Institute of Science and Technology Jul 2020 – Jul 2024
B.E. in Computer Science Engineering (Artificial Intelligence) — 92% *Chennai, India*

Experience

Student Intern — CIRF Aug 2023 – Dec 2023
Excel VBA, Python, Data Automation

- Developed Excel-based automation workflows using VBA and Python to preprocess, analyze, and validate large datasets.
- Automated multi-step calculations using reusable macros and scripts, significantly reducing manual effort and errors.
- Refactored legacy VBA code for readability, maintainability, and performance; added documentation for end users.
- Collaborated with researchers to translate manual analysis processes into reliable Excel-based automation tools.

Projects

Biomedical Data Classification (CKD Prediction) — Python, scikit-learn *Jan 2024*

- Developed machine learning models to predict Chronic Kidney Disease (CKD) stages with over **90% accuracy**.
- Implemented SVM, Decision Tree, and KNN models, achieving an average **F1-score of 0.85**.
- Performed feature selection using ANOVA and recursive feature elimination, reducing dimensionality by **30%**.
- Evaluated models using accuracy, precision, recall, and F1-score to ensure robustness.

Book Recommendation System — Python, scikit-learn, NumPy, Pandas *Feb 2024*

- Built a personalized recommendation system using **K-Nearest Neighbors** on a dataset of **10,000+ books**.
- Implemented collaborative filtering techniques to enhance recommendation relevance.
- Achieved approximately **92% recommendation accuracy** based on user preference similarity.
- Optimized data structures and indexing, reducing search latency by **35%**.

Housing Price Prediction — Python, scikit-learn, Pandas *Jan 2023*

- Built a regression model to estimate housing prices using structured real-world housing data.
- Achieved an $\mathbf{R^2}$ **score of 0.91**, outperforming baseline models by **18%**.
- Identified key price drivers such as room count, neighborhood indicators, and crime metrics.
- Applied feature engineering techniques to improve interpretability and predictive performance.

Credit Card Fraud Detection — Python, scikit-learn, Pandas *Dec 2023*

- Designed a machine learning-based fraud detection system for highly imbalanced transaction data.
- Trained models on **284K+ transactions** with only **0.17% fraud cases**.
- Implemented Logistic Regression, Random Forest, and Isolation Forest, achieving a **94% F1-score**.
- Improved fraud recall by **20%** using **SMOTE** for class imbalance handling.

Fake News Detection Platform — Python, NLP, ReactJS, Node.js *Jun 2023*

- Analyzed **1,000+ news articles** to build an NLP-based fake news classification system.
- Extracted linguistic and sentiment-based features to improve classification accuracy.
- Achieved approximately **98% accuracy**, outperforming baseline models by **15%**.
- Developed a full-stack interface using ReactJS and Node.js for real-time article validation.

AI-Powered Resume Builder — ReactJS, Node.js, Firebase, AI APIs *Nov 2023*

- Built a web application that generates ATS-friendly resumes based on user input and structured templates.
- Integrated AI-based text generation to suggest resume improvements and keyword optimization.

- Implemented authentication and real-time storage using Firebase.
- Improved application performance, reducing load time by **25%**.

Cogni Fetch — ReactJS, Node.js, Google APIs, NLP *Feb 2024*

- Developed an educational web platform providing syllabus-specific learning resources for students.
- Integrated OCR and NLP techniques to extract and analyze syllabus content automatically.
- Built responsive front-end components using ReactJS and backend services with Node.js and Express.js.
- Optimized API calls and data rendering, reducing page load time by **30%**.

Technical Skills

Languages: Python, Excel VBA, C, C++, SQL
Web Technologies: ReactJS, Node.js, Express.js, Firebase
Libraries & Tools: NumPy, Pandas, scikit-learn, OpenCV, Git, Jupyter Notebook
APIs: REST APIs, AI Text Generation APIs, Google APIs
Platforms: Microsoft Excel, Linux
Concepts: Data Automation, Machine Learning, NLP, Debugging, Refactoring, Clean Code, Performance Optimization