Bhoomika Hosur

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My Profile

Aspiring AI Engineer with internship experience in AI/ML development, skilled in designing and implementing AI-based applications using Python. Experienced in building practical solutions through academic and industry projects involving modern AI and language models. Strong problem-solving abilities with a commitment to continuous learning and technical growth.

Skills

Programming & AI: Python (NumPy, Pandas, Matplotlib, Scikit-learn, TensorFlow, PyTorch, OpenCV, HuggingFace, Transformers, LangChain, OpenAI API, Ollama, PyAudio, Seaborn)

Technologies: Machine Learning, Deep Learning, Artificial Intelligence, LLMs, Embeddings, RAG.

Data & Databases: Data Processing, SQL, NoSQL, structured & unstructured data (JSON, PDFs, text)

Software Development & Tools: APIs (FastAPI), Git/GitHub, Jupyter, VSCode, Python Virtual Environment (venv)

Education

Vellore Institute of Technology, Vellore, MTech Integrated (Software Engineering) Sep 2020 – Aug 2025

- **Coursework:** Statistics, Machine learning, Data mining techniques, Database management systems, Web technologies, Data structures and algorithms, Natural language processing, Artificial intelligence.
- **GPA:** 9.49

Narayana Junior College, Hyderabad, Class 12 (Maths, Physics, Chemistry) May 2018 – Jun 2020

- **Percentage:** 94%

Kiddys E-Techno School, Adoni, Class 10 Jul 2017 – Apr 2018

- **GPA:** 9.8

Professional Experience

AI/ML Developer Intern | KuppiSmart Solutions, Hyderabad - On-site Jun 2025 - Present

- **Research:** Conducted research on the poultry sector and explored the use of poultry audio with AI technologies, including computer vision, signal processing, and NLP to improve predictive maintenance and generate actionable insights, integrating domain knowledge to enhance farm sustainability.
- **Data Analysis:** Analyzed poultry environmental condition prompt data to identify key performance indicators (KPIs) and derived insights to better understand their relationship with overall poultry health and productivity.
- **Machine Learning:** Built ML algorithms in Python for predictive maintenance leveraging statistical modeling, bagging, boosting and stacking methods, achieving 90% accuracy with a Random Forest classifier.
- **Computer Vision:** Engineered an end-to-end computer vision pipeline for poultry monitoring, including hen detection, counting, and weight estimation from video streams. Designed and deployed a scalable AI model leveraging YOLO for real-time detection and accurate weight estimation using image-based features.
- **Team Management:** Led the recruitment process for AI/ML department, screening and selecting top candidates from a large applicant pool to build a skilled data analysis team. Managed and reviewed the candidates' data analysis work to ensure timely completion of deliverables.
- **Business Support:** Connected with poultry scientists to explore business development opportunities and technical improvements, enhancing project outcomes in a dynamic startup environment.

Projects

Emergency Room Operations Optimization using Patient Flow and Wait Time Analysis

- **Technologies:** Python ; **Focus Area:** EDA, Data Visualization, Operational Analysis.

Data-Driven Customer Segmentation and Churn Analysis for Revenue Optimization

- **Technologies:** Python(Matplotlib, Seaborn); **Focus Area:** Data Cleaning, Data Segmentation, Churn Analysis.

Credit Card Default Prediction using Machine Learning and Risk Analysis

- **Technologies:** Python (Scikit-learn); **Focus Area:** Classification, Model Evaluation, Feature Importance

Predictive Maintenance System for Aircraft Engines using RUL Estimation

- **Technologies:** Python (Scikit-learn); **Focus Area:** Regression, Feature Engineering, Predictive analytics.

Automated Steel surface Defect Detection

- **Language:** Python (OpenCV, TensorFlow, Keras); **Focus Area:** CNN, Image Classification, Defect Detection

Traffic flow prediction using LSTM

- **Language:** Python (TensorFlow, Keras); **Focus Area:** Deep Learning, Time Series Forecasting.

Automatic AI QA Engineer

- **Language:** Python (Streamlit, Playwright, LangChain) **Focus Area:** Agentic AI, LLMs, Web Automation.

Extra-curriculars

Co-secretary | IEEE (Institute of Electrical and Electronics Engineers) - PES Jan 2022 – Apr 2023

Designed and developed websites to enhance online presence and facilitate structured access to event information. Led event management, conducted guest interviews, and coordinated volunteer recruitment.