DSN SATHVIK

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SUMMARY

AI & machine learning engineering student experienced in designing machine learning workflows, optimizing models, and applying AI to solve complex problems. Skilled in Python, deep learning (CNNs), and natural language processing (NLP). Passionate about building scalable, reliable, and intelligent systems and eager to continuously learn and adapt to new technologies.

WORK EXPERIENCE

Research Assistant Intern | Woxsen Agentic Lab **December, 2025 – Present**

- Fine-tuned open-source LLMs for agent-based AI tasks on small-scale experimental datasets using parameter-efficient methods such as LoRA and QLoRA.
- Analyzed and compared model performance across multiple experiments, documenting results to support evaluation and optimization decisions.
- Collaborated with a 4-member research team to improve LLM training and evaluation workflows.

EDUCATION

B.Tech, Artificial Intelligence & Machine Learning **2023–2027 (Pursuing)**
Woxsen University-Hyderabad | GPA-8.61

High School **2021–2023**
Trividyaa Junior College-Hyderabad | GPA-8.48

Secondary School **2020–2021**
DAV Public School-Hyderabad | GPA-7.0

PROJECTS

Federated Learning using CNN

- Built a federated learning system where multiple clients collaboratively trained a CNN model without sharing raw data, ensuring data privacy.
- Designed client-side training loops and simulated multiple federated rounds for distributed learning.
- Applied FedAvg aggregation to efficiently combine client models and analyze convergence behavior.

RAG-Based PDF Question Answering Bot

- Developed an intelligent RAG-based chatbot for answering PDF queries using embeddings, vector search, and context retrieval with LLM-based response generation.
- Built a modular inference pipeline supporting real-world document analysis and research workflows.

Abstractive Text Summarizer Using T5 Transformer

- Fine-tuned a pre-trained T5 Transformer to generate human-like abstractive summaries from long text inputs.
- Built an end-to-end NLP pipeline including text cleaning, tokenization, attention masks, and sequence padding.
- Evaluated summarization quality using ROUGE metrics and manual readability checks, and developed a simple Python interface for inference.

SKILLS

- Programming Languages: Python, SQL
- Machine Learning: Scikit-learn, TensorFlow, Keras, Feature Engineering, Model Training & Evaluation
- Databases: MySQL
- Tools: Git, GitHub, Jupyter Notebook
- Other: Problem Solving

PATENTS

Registered Design Patent: Autonomous Flood Monitoring System
Design No.: 454336-001 | India | Registered & Published: April 2025

- Co-invented and registered an autonomous flood monitoring system integrating environmental sensors, solar power, and wireless communication.
- Designed for real-time flood monitoring and early warning to support disaster management and public safety.