

Katla Sathwik

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Career Objective

Aspiring **Data Scientist** and **Machine Learning Engineer** with hands-on experience building end-to-end AI systems across data analysis, NLP, computer vision, and LLM-based applications. Seeking an opportunity to apply data-driven thinking, machine learning, and scalable AI solutions to solve real-world problems and drive measurable business impact.

Professional Experience

03/2025 – 06/2025

AI/ML Intern

Brainwave Matrix (Virtual) ↗

- Built an AI-powered fake news detection system using Python and NLP, achieving 90%+ classification accuracy.
- Drove model development and optimization using Logistic Regression and LSTM for text classification.
- Implemented TF-IDF and sentiment analysis to improve feature representation and prediction performance.
- Deployed a Flask-based web application for real-time news verification using scikit-learn and TensorFlow.

Skills

AI/ML & Deep Learning

- Machine Learning:** Scikit-learn, XGBoost, Feature Engineering, EDA, Hyperparameter Tuning, Model Evaluation
- Deep Learning:** PyTorch, TensorFlow, Keras, CNNs, LSTMs, Transformers (BERT, GPT), Attention Mechanisms, Encoder–Decoder
- NLP & LLMs:** Hugging Face Transformers, LangChain, NLTK, spaCy, Prompt Engineering, Tokenization, Fine-tuning, Semantic Search
- AI Agents:** LangChain Agents, Tool Calling, Memory, Agent Orchestration

Data Science & Analytics

Pandas, NumPy, Excel, SQL, Statistical Analysis, **Time-Series Analysis, Forecasting**, Data Visualization (Matplotlib, Seaborn, Power BI)

Generative AI

Large Language Models (LLMs), Prompt Engineering, Retrieval-Augmented Generation (RAG), Embeddings

Computer Vision

OpenCV, YOLO, MediaPipe, Pose Estimation, Real-Time Image Processing, Data Augmentation

Programming Languages

Python, C, C++

Web Development & Cloud

- Frontend:** HTML, CSS, JavaScript, React
- Backend:** Flask, Django, FastAPI, Node.js
- Databases:** MySQL, MongoDB, Firebase
- DevOps/Cloud:** Docker, Git, GitHub, API Development & Deployment

Tools & Platforms

VS Code, Jupyter Notebook, Postman, Linux, Git, GitHub, Docker

Projects

PlantDoc - AI Disease Detection for Farmers

Major Project | 12/2024 - 01/2025

- Developed an **AI-powered plant disease detection system** using leaf images, reducing crop loss by 25% through early diagnosis.
- Implemented **CNN-based deep learning models** achieving 95%+ classification accuracy across mobile and web platforms.
- Performed extensive data augmentation and preprocessing to improve model robustness in real-world field conditions.
- Deployed a lightweight, mobile-friendly application with real-time inference and integrated OpenCV pipelines using Python, TensorFlow/Keras, Flask, Flutter, and Docker.

CareerForge - AI-Powered Career Platform

Personal Project

- Designed and developed an **AI-driven career platform** that personalized roadmaps and automated job applications, improving user job search efficiency by 30%.
- Built a scalable **resume parser and job-matching system** using transformer-based models with **PyTorch and Hugging Face**.
- Implemented machine learning algorithms for dynamic skill assessment and real-time job matching, increasing relevant job recommendations by 25%.
- Containerized and deployed LLM pipelines using Docker, Flask, and MongoDB, while exploring ONNX and quantization for model optimization and edge deployment readiness.

Bargain Bot - E-commerce Negotiation AI

Personal Project

- Engineered an **AI-powered e-commerce negotiation chatbot** that automated price bargaining and increased user savings by 20%.
- Fine-tuned GPT-style models and implemented **agentic workflows using LangChain** to manage dynamic, multi-turn conversations.
- Built NLP pipelines using **Transformers and SpaCy** to interpret user intent and generate persuasive counteroffers.
- Designed adaptive negotiation strategies and deployed the system as a web and mobile application using Python, TensorFlow, React, Node.js, and Docker.

Sign Language Action Detection

Personal Project

- Developed a real-time **computer vision system to detect and classify sign language gestures**, improving accessibility for hearing-impaired users.
- Designed and trained a **CNN + LSTM pipeline** achieving 92%+ accuracy on video-based gesture datasets.
- Integrated pose estimation, skeletal tracking, and data augmentation techniques to improve robustness under diverse conditions.
- Deployed the model on a mobile application using a Flask backend and optimized inference through TensorFlow Lite, enabling offline and resource-efficient usage.

Data Analysis

Personal Project

- Analyzed **customer churn data** to identify key behavioral and pricing factors influencing retention risk.
- Conducted exploratory data analysis and feature engineering to uncover patterns across customer usage and tenure.
- Analyzed **electric vehicle charging data** to understand demand trends, peak usage periods, and temporal patterns.
- Built forecasting and analytical models to support churn reduction strategies and EV charging infrastructure planning.

NLP Book Recommendation System

Personal Project

- Built an **NLP-based book recommendation system** by analyzing book descriptions and user preferences.
- Implemented text preprocessing and feature extraction using **TF-IDF** and similarity metrics to generate personalized recommendations.
- Developed recommendation logic using **cosine similarity** to rank and suggest relevant books.
- Deployed the system using Python with an interactive interface for real-time book discovery.

Trainings / Certifications

08/2025 – 01/2026	Data Science <i>INTERNSHALA TRAININGS</i> <ul style="list-style-type: none">Learned and applied Excel, SQL, and Power BI for data cleaning, analysis, and visualization.Developed a strong foundation in statistics, Python, and machine learning for data-driven problem solving.Practiced end-to-end data science workflows, including data preprocessing, exploratory analysis, and model building.
01/2025	Deep Learning Bootcamp - Attendee <i>Massachusetts Institute of Technology (MIT)</i> <ul style="list-style-type: none">Attended intensive lectures and hands-on software labs covering CNNs, RNNs, GANs, LLMs, and Reinforcement Learning.Built and experimented on projects including Music Generation, Facial Detection, and LLM fine-tuning.Presented a final project applying advanced deep learning techniques to real-world problem statements.
01/2026	EFSET <i>English Proficiency Test</i> EF SET English Certificate — C2 Proficient (83/100), Jan 2026

Education Credentials

Vaagdevi Engineering College

BTech : Electronics and Communication Engineering

Dec 2021 - Jun 2025 | Warangal, India

CGPA : 7.5/10

Awards & Achievements

- Awarded **Silver Medal** in the **General Knowledge Olympiad** (2019).
- Awarded **Runner-up** at a **State-Level Technical Seminar** on “*Emerging Trends in Artificial Intelligence*” (2022).

Interests

- Startups & Entrepreneurship
- Cricket & Fitness
- Tech Reading