

MADHALA SIVA NARAYANA SURYA CHANDRA

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PROFESSIONAL SUMMARY

Skilled AI Engineer and Python developer with strong foundations in Statistics, NumPy, and Pandas for data processing and analysis. Experienced in developing Machine Learning, Deep Learning, and Computer Vision solutions, including CNN-based image classification and object detection using YOLOv3, YOLOv4, and YOLOv7. Proficient in building end-to-end AI systems, from data preparation and model training to deployment and monitoring. Hands-on experience with LLM applications, RAG pipelines, and LangChain-based workflows for building intelligent AI-powered systems.

EDUCATION

Bachelor of Technology in ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

2021 – 2025

Mvr College Of Engineering and Technology – 8.02/10.00

Vijayawada, India

TECHNICAL SKILLS

- **Programming:** Python.
- **Algorithms / ML:** Supervised & unsupervised learning, regression, classification, clustering, model evaluation and hyperparameter tuning.
- **Deep Learning:** ANN, CNNs, Object Detection using YOLO Series, transfer learning techniques (VGG16 | ResNet).
- **NLP:** Tokenization, embeddings, NLP pipeline
- **Computer Vision:** Image preprocessing, classification, object detection, feature extraction, OpenCV pipelines.
- **Frameworks & Libraries:** TensorFlow, Keras, scikit-learn, OpenCV, HuggingFace
- **Infrastructure & Tools:** Git / GitHub, Flask, Linux, Insomnia for checking the API working, Labellmg
- **Messaging & Integration:** RabbitMQ for asynchronous task queues and pipeline orchestration
- **AI & LLM Technologies:** LangChain, RAG, Local LLMs, API-based LLM Integration

EXPERIENCE

Data Scientist Intern
The Skill Union

Jan **2025** – Dec 2025
Hyderabad, INDIA

AI Trainee Engineer
Assimilate Technologies

Jan 2026 – Present
Pune, India

PROJECTS

1. AI-Powered Customer Retention Prediction System (Machine Learning Project)

- Scraped and aggregated telecom data from public sources (Jio, Airtel, BSNL, Vi) using BeautifulSoup, building a reproducible data ingestion pipeline.
- I designed and implemented a feature-engineering and selection pipeline to handle missing values, outliers, and feature scaling, improving input quality for modelling.
- I trained multiple machine-learning models and selected the best performer based on ROC and AUC metrics.
- I maintained a continuous inference loop — feeding new data back into the trained model to monitor and improve performance over time.

- I deployed the solution to the cloud (Render.com for the app endpoint and AWS SageMaker for model training/hosting) and implemented basic CI for retraining and inference.

2. Developing optimized object detection models for Vedanta Limited

- Gathering data from client locations, utilizing OpenCV and RTSP links, while also performing annotation for object detection use cases, demonstrating proficiency in data acquisition and preparation.
- Preparing the data using Labelimg, Labelme, and RoboFlow Annotation tools.
- Successfully implemented Yolov4, Yolov4-tiny, Yolov7, and Yolov7-tiny models for object detection, and contributed to improving accuracy in identifying critical objects within Vedanta projects.
- Writing the Python scripts for multiple use cases based on the given ROI from our client configuration files.
- Creating containers from images using Docker and running the entire scripts which developed.
- Working with Data Augmentation techniques for better model Performance

3. End-to-End Food Classifier (VGG/ResNet) with Per-Class Nutritional Metadata

- Designed and trained a CNN image-classification pipeline on 20,400 images (34 classes; 300 train / 200 val / 100 test per class), using a custom CNN and transfer-learning with VGG-16, VGG-19 and ResNet architectures; saved model weight files for production use.
- Developed a Flask front-end (app.py + HTML) allowing users to upload an image, choose the ground-truth class and select the model for on-demand inference; the app returns predicted class plus full model metrics (train/val/test accuracy, loss).
- Integrated per-class JSON metadata (fat, protein, fiber, calories, calcium, etc.) so that each prediction automatically retrieves and displays the complete nutritional profile for the predicted item.
- Implemented reproducible training and evaluation workflows with model comparison and reporting, enabling quick identification of misclassifications and iterative retraining across architectures.
- Delivered an end-to-end, production-ready solution: organized dataset, versioned model weights (three variants), user-driven inference UI, and clear performance reporting to support deployment and future automation.

4. MedFlow (AI powered Clinical Notes generation) for UAE and USA clients

- Built MedFlow, an AI-powered clinical workflow platform that automates medical consultation documentation and management.
- Developed AI-based transcription and SOAP note generation from doctor-patient conversations.
- Implemented template-based clinical documentation to standardize medical records across consultations.
- Integrated secure audio capture, consent management, and automated clinical note generation.
- Designed a multi-role system (Admin, Doctor, Nurse) for managing consultations and patient data.
- Utilized LLMs and AI pipelines to automate clinical documentation and reduce manual workload for healthcare professionals.
- Built scalable backend workflows for AI processing, data storage, and consultation lifecycle management.

5. AI ChatBot (Rag based chatbot for Ajman government Land department)- POC for UAE client

- Developed a RAG-based AI chatbot (POC) to answer user queries related to services of the Ajman Government Land Department.
- Implemented web data extraction from the department's official website to build the chatbot knowledge base.
- Designed a retrieval and generation pipeline using LLMs to provide accurate and context-aware responses.
- Improved user interaction and information accessibility by enabling instant responses to land department queries.
- Built a scalable system for updating website data and maintaining up-to-date responses.

CERTIFICATIONS & ACHIEVEMENTS

- **IBM Machine Learning Certification (edX Platform)** – Successfully completed IBM’s Machine Learning program, gaining solid expertise in supervised/unsupervised learning, model evaluation, and real-world ML workflows.
- **Google Cloud Skill Badge: Store, Process, and Manage Data on Google Cloud – Console** – Hands-on experience using Google Cloud Console to manage storage, databases, data workflows, and cloud data operations.
- **Google Cloud Skill Badge: Store, Process, and Manage Data on Google Cloud – Command Line** – Demonstrated proficiency in performing data operations using the gcloud CLI, including storage management, data pipelines, and cloud resource automation.
- **Google Cloud Skill Badge: Set Up an App Dev Environment on Google Cloud** – Built and configured a cloud-native development environment, enabling application deployment, debugging, IAM configuration, and CI/CD readiness.
- **Python Networking (Coursera)** – Gained practical knowledge in Python-based network programming, including sockets, APIs, and automation of networking tasks.
- **Deep Learning Specialization (Coursera – Andrew Ng)**
Gained hands-on expertise in neural networks, CNNs, sequence models, optimization techniques, and end-to-end deep learning workflows.