Meet Vyas

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Education

Pandit Deendayal Energy University, BTech in Computer Science and Engineering

2023 - 2027

• CGPA: 9.51 / 10.00

Skills

Languages: C, C++, Python, R, SQL, Assembly

Libraries: TensorFlow, LangChain, Scikit-learn, NumPy, Pandas

Frameworks: FastAPI, Flask

Data Visualization: Matplotlib, Seaborn, Plotly, MLxtend

Databases: MySQL, PostgreSQL

Tools: Git, Jupyter, VS Code, Shell Scripting (via WSL)

Interests: Machine Learning Core, Computer Vision, Linux, Low Level Programming

Achievements

2nd IEEE International Conference on Artificial Intelligence and Machine Vision (AIMV) Volunteer

2025

- Assisted in organizing a national-level IEEE conference, managing logistics, registration, and technical coordination.
- Gained hands-on experience in event coordination, developing leadership and organizational skills, and actually discovering a passion for managing and leading technical and logistical operations.
- Engaged with speakers and researchers, gaining exposure to emerging AI technologies and expanding professional networks in the field.
- Received certificate [View Certificate].

Smart India Hackathon (SIH) 2025 - Qualified AI Document Intelligence for Kochi Metro Rail Limited (KMRL)

2025

- National Level Hackathon organized by Govt. of India
- Developed an AI-powered document summarization and classification pipeline to process multilingual (English and Malayalam) data for metro operations.
- Improved information retrieval efficiency for metro departments by condensing large unstructured documents into concise actionable summaries.
- Collaborated with a 6-member team to design the system architecture and integrate the AI backend using Python and Transformers.

Smart India Hackathon (SIH) 2023 - Qualified Chatbot-based Helpdesk for Government Departments

2023

- Developed a front-end interface and integrated it with APIs for routing specific user queries to government service portals.
- Collaborated with a 6-member team to design the prototype.

Projects

Vision-Tuner: Advanced Fine-Tuning Library for Vision Models

GitHub

- Architected and developed a comprehensive research library in Python for using dozens of state-of-the-art image classification models, including both CNNs and Vision Transformers.
- Implemented full research workflow, including robust k-fold cross-validation, hyperparameter tuning, and a suite of model interpretability visualizations (Grad-CAM, Attention Maps).
- Tools Used: Python, TensorFlow / Keras, Pydantic, Scikit-learn, NumPy.

BioAstra - AI-Powered NASA Bioscience Research Dashboard

GitHub

- Developed a web application to analyze and visualize over 600 NASA bioscience publications, enabling researchers to explore experimental results and identify trends.
- Engineered an automated data pipeline to ingest raw publication data, process scientific text using Hugging Face Transformers for Named Entity Recognition (NER), and populate a PostgreSQL database.
- Built a RESTful API backend using FastAPI (Python) to serve processed data, handle complex queries, and provide aggregated analytics for the dashboard.
- Tools Used: Python, FastAPI, PostgreSQL, SQLAlchemy, Hugging Face.

Corporate Expense Reimbursement Platform

GitHub

- Developed a full-stack web app to automate expense reimbursement with multi-role access control (Admin, Manager, Employee).
- Built a dynamic multi-step approval workflow and integrated real-time currency conversion via REST API.
- Technologies Used: Python, FastAPI, PostgreSQL, SQLAlchemy, HTML.

End-to-End Housing Price Prediction Platform

- Developed a full-stack web application to predict California housing prices using a TensorFlow/Keras neural network.
- Engineered a robust preprocessing pipeline with Scikit-learn, featuring custom transformers, feature engineering, and PCA for dimensionality reduction.
- Designed a high-performance FastAPI backend with caching and dynamic frontend that provides real-time predictions and data exploration through various plots.
- Tools Used: Python, FastAPI, TensorFlow, Scikit-learn, Pandas, Matplotlib, HTML, CSS, JavaScript.

Question-Answer Chatbot using LangChain

- Developed a conversational chatbot capable of answering questions from text documents and PDFs using LangChain and HuggingFace models with Retrieval-Augmented Generation (RAG).
- Implemented document loaders, embeddings (HuggingFaceEmbeddings), vector store (Chroma), and conversational retrieval chain for accurate context-based responses.
- Tools Used: Python, LangChain, HuggingFace Transformers, Chroma.