PIYUSH KUMAR RATH

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EDUCATION

VELLORE INSTITUTE OF TECHNOLOGY Expected July 2026

Bachelor of Technology

Computer Science and Engineering (Specialization in Artificial Intelligence and Machine Learning)

CGPA: 8.49/10

SKILL

Java | SpringBoot | Python | Flask | Numpy | Pandas | Matplotlib | Scikit-Learn | TensorFlow | PyTorch | NLP | MySQL | MongoDB | Postman | Git

UNIVERSITY PROJECTS

DATA DRIFT TOOL Sept 2025 - Sept 2025

Technologies Used: Python, Pandas, Scikit-learn, Streamlit

- Engineered an interactive dashboard to monitor and visualize **4+** types of data drift across more than **50** model features, enhancing the clarity of stakeholder reports by **40%**.
- Automated the drift detection process, reducing manual analysis from hours to minutes (>**95%** time savings) and boosting alert precision by **30%**.
- Implemented core statistical methods such as the Kolmogorov-Smirnov test for numerical features and the Chi-Squared test for categorical features to accurately quantify distribution changes.

INTELLIGENT DATA MOCKER Jul 2025 - Aug 2025

Technologies Used: React, Next.js, FastAPI, MongoDB, LangChain, Google Gemini API

- Built a full-stack, AI-driven platform with **10+** modern technologies that slashed mock data creation time by **90%** compared to manual entry.
- Developed a responsive chat UI with **12+** custom React components and **15+** features, including persistent chats and real-time validation, to ensure a seamless user experience.
- Constructed a secure FastAPI backend with **11** asynchronous API endpoints for user authentication (JWT), real-time data streaming, and AI-powered title generation via the Gemini API.
- Leveraged LangChain to architect prompt engineering chains and output parsers, enabling the Google Gemini API to generate contextually aware and structurally accurate JSON mock data from natural language inputs.

SIGN LANGUAGE RECOGNITION SYSTEM Jan 2024 - Mar 2024

Technologies Used: Python, TensorFlow, Keras, OpenCV, Pandas

- Architected a Convolutional Neural Network (CNN) that achieved **95%** test accuracy in recognizing American Sign Language, trained on a diverse dataset of **15,000+** images.
- Implemented a complete data pipeline using image augmentation techniques that increased the model's generalization capabilities by **25%** and significantly reduced overfitting.
- Engineered a real-time inference module with OpenCV to capture and preprocess live video frames, enabling the deployed CNN model to translate sign language gestures instantly.

EXTRACURRICULAR ACTIVITIES

LINPACK CLUB VIT Bhopal University, IND

Core Member July 2022 – May 2025

- Led hands-on workshops for 100+ members, enhancing technical proficiency in Python and Git.
- Mentored a cohort of **15+** junior members, leading two project teams to a top-5 finish in a university-wide competition.
- Coordinated a collaborative university hackathon that enhanced technical learning and networking for **150+** participants.

PARTICIPANT | ADOBE INDIA HACKATHON

CERTIFICATIONS

Microsoft Certified: Azure Fundamentals | Postman API Student Expert | IBM GEN-AI | IBM BLOCKCHAIN – Developer

ADDITIONAL

Languages: Fluent in English, Hindi

Interests & Hobbies: Photography, Chess, Team-Based Strategy Gaming