

# DIPESH KUMAR

M.Sc. AI/ML — Deep Learning Specialist

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## PROFESSIONAL SUMMARY

AI/ML graduate student specialising in deep learning, LLM fine-tuning, TTS, computer vision, and RAG systems. Experienced in building end-to-end ML pipelines, GPU-optimised training workflows, and deploying real-time applications using Streamlit and Flask.

## EDUCATION

<b>M.Sc. Artificial Intelligence &amp; Machine Learning</b>	2024 – 2026
<i>Indian Institute of Information Technology (IIIT), Lucknow</i>	8.25
<b>B.Sc. Mathematics</b>	2020 – 2023
<i>PDUS University, Sikar</i>	72.59

## EXPERIENCE

<b>Gen AI Intern</b>	2025
<i>Zencia</i>	
Tech: Python, PyTorch, Transformers, FastAPI, Streamlit, Docker	
• Integrated LLMs into production workflows and enhanced inference reliability	
• Developed API endpoints using FastAPI/Flask and optimized GenAI service pipelines	
• Contributed to fine-tuning efforts improving downstream task performance	
<b>Mathematics Teacher</b>	2023 – 2024
<i>SMD Vidhya Mandir</i>	
Tech: Digital teaching tools, assessment systems	
• Taught algebra, geometry, calculus using structured learning techniques	
• Improved student performance through personalized assessments	

## PROJECTS

<b>Multilingual Neural TTS – Realistic Voice Cloning (Internship Project)</b>	2025
Tech: PyTorch, LLaMA, SNAC Codec, CUDA, Transformers	
• Built multilingual TTS with cross-language voice transfer; fine-tuned LLaMA TTS model; integrated SNAC codec for high-fidelity audio tokens; optimized pipeline using mixed-precision GPU training	
<b>Weapon Detection in Public Areas</b>	2025
Tech: YOLOv8s, PyTorch, Streamlit	
• Developed real-time CCTV weapon detection (70% accuracy); deployed interactive Streamlit dashboard	
<b>Smart Doorbell with Face Recognition</b>	2025
Tech: AWS Rekognition, OpenCV, Flask, Bootstrap	
• Built visitor detection system with automated alerts and dashboard for face management + snapshot logs	
<b>AI Knowledge-Base Chatbot (RAG)</b>	2025
Tech: LangChain, ChromaDB, OpenAI API, Streamlit	
• Developed RAG chatbot using vector search; reduced hallucinations 60%; added document upload + source-aware responses	
<b>Coral Reef Health Detection</b>	2025
Tech: PyTorch, CNNs, Tableau	
• Created 80%-accurate coral classification model; visualized bleaching patterns for conservation insights	

## SKILLS

**Languages & Frameworks:** Python, C, SQL, LaTeX, NumPy, Pandas, Matplotlib, Seaborn

**Machine Learning:** Regression, Classification, Clustering, Feature Engineering, XGBoost, LightGBM, Scikit-learn, RLHF

**Deep Learning:** CNNs, RNNs, LSTMs, Transformers, Autoencoders, Keras, TensorFlow, PyTorch, OpenCV, Computer Vision

**GenAI & LLMs:** GPT, HuggingFace, LangChain, LangGraph, RAG, FastAPI, Fine-tuning, NLP, Cloud Computing

**Data Engineering & Cloud:** GCP, Azure, Hadoop, ETL Pipelines, ChromaDB, Vector Databases

**Tools & Platforms:** Git, GitHub, Jupyter, Streamlit, Docker, VS Code, Power BI, DVC, MLflow, CUDA

## ACHIEVEMENTS

- AIR 1080 – IIT JAM 2024 (Mathematics)
- Best Student Award – Recognized for sports excellence