AYUSH KUMAR

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Education

VIT Bhopal University — Bhopal, Madhya Pradesh
B.Tech. in Computer Science — CGPA: 8.56 — *July 2022 – Present*

Experience

Fresenius Digital Technology — Remote, India
Data Science Intern — *May 2025 – Aug 2025*

- Built machine learning models that increased prediction accuracy by 15% for data-driven solutions, contributing to faster and more reliable insights for business decision-making.
- Developed and optimized RAG pipelines using Python, improving response accuracy by 18% and reducing retrieval latency by 12%, enhancing overall system performance.
- Collaborated with cross-functional teams to translate complex findings into actionable recommendations, while conducting industry research to ensure the model engineered aligned with business objectives.

Technical Skills

- **Programming Languages**: C++, Python
- **Libraries & Tools**: NumPy, Pandas, Scikit-learn, OpenCV, TensorFlow, Keras, Matplotlib, Seaborn
- **Soft Skills:** Team Collaboration, Analysis Evaluation, Interdisciplinary Coordination

Projects

DocVision AI OCR — Sep 2025

- Developed an AI-powered document analysis system that extracts text from PDFs using RAG and OCR technology and answers natural language questions with source attribution.
- Designed and implemented a scalable multi-modal document analysis pipeline utilizing Sentence Transformers, Google FLAN-T5, EasyOCR, and PyMuPDF to perform question answering across large, image-rich datasets comprising up to 10 PDFs (200MB each).
- Enhanced document accessibility by enabling OCR-based text extraction from image-heavy PDFs,through automated question-answering, and improved research efficiency by providing structured responses downloadable word documents.

CNN-Based Kidney Disease classification from CT Scans — Sep 2024 – Dec 2024

- Created a deep learning pipeline to automatically diagnose four different kidney diseases from CT scan images using convolutional neural networks and optimized Conv2D/MaxPooling architecture
- Designed the complete machine learning pipeline including data pre-processing, CNN architecture with attention mechanisms and model optimization.
- Achieved 95% classification accuracy with 7% improvement in model sensitivity, enabling accurate automated diagnosis of kidney conditions from medical imaging.

Heart Disease Predictor Using ML Algorithms — Nov 2023 – Dec 2023

- Preprocessed and analyzed the heart disease dataset, handling the missing values and performing exploratory data analysis to identify key clinical predictors.
- Implemented and evaluated different algorithms, performed statistical analysis, and conducted comprehensive model comparison.
- Identified Random Forest as optimal algorithm achieving 98% accuracy with 0.98 AUC score, providing reliable heart disease risk prediction.

Extra-Curricular

- Core Member, AI Club
- Ranked 46th out of 1000 teams in Shell.ai Hackathon Fuel Blend Properties Prediction Challenge.
- Ranked 164th out of 1500 teams in AWS Zelestra Hackathon Solar Energy Production Challenge.
- Achieved global rank of 2351 in TCS CodeVita Season 12

Certifications

- NPTEL - Cloud Computing, Marketing Analytics
- GenAI by IBM Adroit