

Aditya Kushal

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EDUCATION

RV University – CGPA: 9.57/10

B.Tech in Computer Science, Minor in FinTech

Bengaluru, KA

Nov. 2022 – Jun. 2026

EXPERIENCE

Deep Learning Intern

VectraTech Global

Sep. 2023 – May 2025

Bengaluru, KA

- Designed deep learning models for breast cancer detection using annotated mammography datasets.
- Implemented **BIRADS classification** (VGG16) and **Breast Cancer Object Detection** (YOLOv7), achieving clinically relevant performance.
- Trained **Breast Density Estimation** model on VGG16, reaching **99.76% accuracy** on the InBreast dataset.
- Generated robust training/testing samples with **Augmentor** for data augmentation, improving generalization.

Artificial Intelligence Intern

Shaale

Aug. 2023 – May 2024

Bengaluru, KA

- Built a **domain-specific chatbot** integrating **OpenAI API** with company knowledge base, improving response accuracy.
- Enhanced retrieval relevance with **Cohere Reranker API**, boosting response quality for domain-specific queries.
- Integrated **Tavily Web Search API** to provide real-time external knowledge, extending chatbot capabilities.

PROJECTS

Deep Model Compression | *PyTorch, NumPy, Torchpruning*

Jun. 2025

- Applied **structured pruning** to CNNs (LeNet-5, VGG-16, ResNet-50, DenseNet-121) on MNIST and CIFAR-10.
- Reduced parameters by up to **99.6%** and FLOPs by **98.5%** with only **0.8–5% accuracy drop**.
- Achieved **14.5× model size reduction** (LeNet-5), enabling edge deployment.

Obstacle Avoidance System for Visually Impaired | *YOLOv8-nano, PyTorch*

May 2024

- Trained a **YOLOv8-nano detector** for potholes, poles, vehicles, and roadside stalls.
- Integrated **auditory feedback** to guide visually impaired users during navigation.

PDFBot Llama | *Python, LLaMA, OpenAI, Gradio*

Sep. 2024

- Developed a system to **chat with PDFs**, supporting **local Ollama inference** and **OpenAI API** queries.
- Built three versions: Jupyter (OpenAI), Jupyter (Ollama), and **Gradio web interface**.
- Handled large PDFs (up to 200 pages) with **≈90% answer accuracy** and **≈28 sec average response time**; *slower due to local hardware constraints*, performing well on factual questions.

TECHNICAL SKILLS

Languages: Python, C, SQL

Deep Learning: PyTorch, TensorFlow, YOLOv7/YOLOv8, Model Pruning/Compression, Transfer Learning

Machine Learning: Scikit-learn, Pandas, NumPy

APIs/Tools: OpenAI API, Cohere API, Tavily API, Git, Conda/Pip

ACHIEVEMENTS

- Awarded merit-based scholarship for ranking in **top 5%** of B.Tech cohort.
- Led the winning team in **Tarkash'25 Data Analytics** hackathon, focusing on **data cleaning, visualization (Tableau), and presenting actionable insights** to the jury.