

RIGVED SHIRVALKAR

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EDUCATION:

New York University, Tandon School of Engineering, Brooklyn, NY

May 2026

Master of Science, Computer Engineering

Coursework: Computer Systems Architecture, Real Time Embedded Systems, Machine Learning

Amrita School of Engineering, Amritapuri, India

May 2024

Bachelor of Technology, Electronics and Computer Engineering

Relevant Coursework: Data Structures and Algorithms, Deep Learning, Machine Learning, Operating Systems, DBMS (SQL)

TECHNICAL SKILLS:

Languages & Tools: Python, PyTorch, TensorFlow, FastAPI, Django, ReactJS, Streamlit, Langchain, Llama-Index, Pandas, Numpy, Git, C++

Domains: Natural Language Processing, Computer Vision, Deep Learning, Generative Models, Full-Stack Web Development

EXPERIENCE:

AI Intern

Comsense Technologies.

Feb 2024 – Jun 2024

- Developed a custom **Retrieval-Augmented Generation (RAG) pipeline**, finetuned embedding and LLM models that improved answer reliability and hit rates by **22%**. Experimented with multiple vector databases for faster performance.
- Designed and integrated the backend from scratch using **FastAPI** and **LlamaIndex**, adding key features like OCR support and semantic parsing and metadata tracking, while collaborating with the frontend team for smooth integration.
- Created proof-of-concept (POC) **generative AI solutions** for clients and deployed them on AWS SageMaker to ensure scalable and efficient performance
- Collaborated with another team to implement a genetic algorithm for optimizing travel path search for a client.

Open Source Contributor

Red Hen Lab

Jun 2023 – Nov 2023

- Created a **multi-model Deep Learning Pipeline** for captioning speech gestures in Christian art images.
- Applied AdaIn for **style transfer**, **fine-tuned YOLO V8** for pose detection on art images, fine-tuned YOLO V8 classification model for gesture classification and scene classification.
- Created and labeled datasets of over 2000 images, trained models on them while using **HPC clusters** for training large model under the guidance of two previous contributors.

Full Stack Developer

Traboda

Mar 2021 – Jul 2021

- Integrated backend features using **Django** for performance improvements and additional functionalities.
- Enhanced and streamlined **UI and UX** by adding new features and resolving issues on both backend and frontend

PROJECTS:

EigenCAM for YOLO V8

- Developed a package for applying EigenCAM on YOLO V8 that got **starred by over 100 people on GitHub**
- Visualized model attention regions in classification, segmentation, and object detection tasks.

Underwater Image Enhancement (Undergraduate project)

- Combined GANs and transformers using encoder-decoder structure to enhance underwater images. Research under Prof. Sumi Suresh, CSE Dept, Amrita University.
- Combined methods from multiple research papers to achieve near state of art results of PSNR: 25.87, SSIM:0.91, UIQM:3.12

Mitigating Bias in Image Classification

Amrita School of Engineering

- Pretrained models on diverse datasets for improved generalization. Showed method to mitigate bias using data manipulation.
- Paper accepted at the 7th International Conference on Electronics, Materials Engineering, and Nanotechnology.

Pneumonia Detection Using Chest X-rays

Amrita School of Engineering

- Enhanced detection accuracy using ResNet-based models and ensemble techniques, demonstrating near state-of-the-art results by following specific best practices for model training.
- Paper accepted at the 8th International Conference on Smart Trends for Computing and Communications.