

ARAV ADIKESH RAMAKRISHNAN

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EDUCATION

University of Massachusetts - Amherst

Sep 2024 - May 2026

Master's, Computer Science

GPA: 4

- Bay State Scholar
- Coursework : Machine Learning, Modern Neural Networks, Reinforcement Learning, Security & Privacy in GenAI

University of Massachusetts - Amherst

May 2024

Bachelor's, Computer Science

GPA: 3.95

- Chancellor's Award
- Coursework : Software Engineering (Typescript), Algorithms, Game Programming (C#), Operating Systems (C/C++), Database Management (SQL), Data Structures & Algorithms, Intelligent Visual Computing, Search Engines

PROFESSIONAL EXPERIENCE

Prime Focus Technologies

Los Angeles, CA, USA

AI/ML Intern

May 2024 - Sep 2024

- Led development of a production-ready conversational GenAI-driven image generation system with enterprise integration
- Engineered distributed architecture with JavaScript frontend, SpringBoot microservices on Kubernetes, and Flask/Python APIs on AWS Lambda, integrated with PostgreSQL/Redis achieving 100ms response times and 99.9% uptime
- Reduced image generation time by 40% and infrastructure costs by 35% through optimized processing, successfully demonstrating the solution at International Broadcasting Convention (IBC)
- Designed and deployed a scalable Retrieval-Augmented Generation (RAG) chatbot leveraging LangChain, FAISS vector store, and fine-tuned HuggingFace models (RoBERTa, DeBERTa) to handle 1K+ daily customer queries
- Achieved 92% customer satisfaction across 5 media clients, reducing annual support costs by \$20K and improving ticket resolution times by 44%.

UMass Rescue Lab

Amherst, MA, USA

Independent Researcher

Aug 2024 - Dec 2024

- Architected a production-grade deepfake detection system using PyTorch with parallel CNN ensembles (EfficientNet-B7 and XceptionNet), BlazeFace/MTCNN for face detection, and custom data augmentation techniques, achieving 96% accuracy on DeepFake TIMIT (10% higher than baseline) and processing 100+ videos/hour
- Engineered a containerized MLOps pipeline with Flask RESTful APIs, RetinaFace for precise facial landmarks, and dlib for face alignment, reducing model deployment time by 65% and enabling automated batch processing of 1000+ videos/day for the RescueBox platform

UMass Amherst

Amherst, MA, USA

Undergraduate Course Assistant (UCA)

Sep 2023 - May 2024

- Conducted 5+ weekly office hours, assisting 50+ students with clarifying doubts and troubleshooting code, while providing supplementary resources to enhance learning outcomes.
- Graded 200+ assignments with precision, offering constructive feedback to support student growth and ensure academic excellence.

PROJECTS

YOLO Knowledge Distillation

Nov 2024 - Dec 2024

ML Researcher

- Collaborated in a team of two to develop an optimized knowledge distillation framework for YOLOv8 using PyTorch, achieving 37.61% accuracy improvement on Oxford Pets while compressing model to 2.7M parameters
- Reduced model FLOPs by 95% (from 99.7B to 4.3B) and increased inference speed by 2.4x, enabling efficient deployment across CIFAR-10, Tiny-ImageNet, and Oxford Pets datasets.

UMass Outing Club Gear Locker Project

Sep 2023 - Dec 2023

Lead Backend Developer

- Led the development of a scalable REST API using Express.js/TypeScript with Firebase Real-time Database, handling 100+ daily transactions and reducing data fetch latency by 60%
- Managed a cross-functional team of 3 developers, implementing Agile methodologies and CI/CD pipeline with GitHub Actions, resulting in 30% faster feature delivery and zero critical production bugs

SKILLS

- Languages:** Python, TypeScript, JavaScript, Java, C#, C/C++
- Other Skills & Tools :** Pytorch, NumPy, Agile, AWS, Data Structures & Algorithms, Express.js, Flask, Git, JIRA, Kubernetes, LangChain, MySQL, Postgres, OpenCV, Unity