# ARAV ADIKESH RAMAKRISHNAN

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## EDUCATION

**Master of Science in Computer Science**       **Expected Graduation: May 2026**
*University of Massachusetts Amherst*       *GPA: 4.0*
Graduate Bay State Scholarship

**Bachelor of Science in Computer Science**       **Aug 2021 - May 2024**
*University of Massachusetts Amherst*       *GPA: 3.93*
Minor in Economics, Chancellor's Scholarship, Dean's List

Relevant Coursework: Data Structures & Algorithms, Software Engineering, Advanced Algorithms, Operating Systems, Database Management, Machine Learning, Reinforcement Learning, Trustworthy & Responsible Artificial Intelligence, Advanced Natural Language Processing, Algorithms for Data Science, Advanced Information Retrieval, Statistics

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## SKILLS

**Languages:** Python, TypeScript, JavaScript, Java, SQL
**Other Skills & Tools :** Amazon Web Services (AWS), PyTorch, Pandas, Git, Kubernetes, MySQL, Postgres, Apache Spark, Docker, Jira, Scrum, Node.js, React

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## WORK EXPERIENCE

**UMass Center for Data Science and Artificial Intelligence**       **Boston, MA**
*Software Engineering Intern*       *Sept 2025 - Present*
- Architected Model Context Protocol (MCP) server supporting PDF, CSV, and DOCX generation with seamless campus gen-AI platform UI integration, enabling users to create and export ideas in multiple formats directly through the chat interface

*Data Science Fellow*       *May 2025 – Aug 2025*
- Led development of Media Cloud classifier pipeline by architecting end-to-end dockerized system with automated article retrieval, annotation, and classification, reducing manual researcher effort by 90% while processing 100,000+ articles from 2-billion article database at a 96% accuracy
- Built production-ready ML classification suite with containerized BERT and Naive Bayes models, Optuna hyperparameter optimization, and automated evaluation frameworks

**Prime Focus Technologies**       **Los Angeles, CA**
*Machine Learning Intern*       *May 2024 - Sep 2024*
- Built RAG-powered customer support chatbot for high-volume client inquiries by implementing LangChain and FAISS vector database architecture, delivering 88% customer satisfaction scores, 30% faster ticket resolution times, and handling 500+ daily queries
- Reduced operational support costs by developing automated query resolution system that intelligently deflects routine support tickets while maintaining high accuracy on technical product questions, generating $15K in estimated annual savings
- Engineered production-grade conversational AI system by architecting JavaScript frontend with SpringBoot microservices on Kubernetes and Flask APIs on AWS Lambda, achieving sub-200ms response times with 99.5% uptime

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## PROJECTS

**UMass BioNLP Lab – *LLM Researcher***       *Jan 2025 - Present*
- Developed MedCOD framework integrating UMLS and LLM-KB knowledge sources to enhance English-to-Spanish medical translation, improving translation quality by 80% (BLEU increase from 24.47 to 44.23) through structured prompting and LoRA fine-tuning, enabling open-source models to outperform GPT-4o in clinical accuracy
- Published research in EMNLP 2025 Findings, contributing novel approach to domain-specific translation that addresses critical healthcare communication barriers for limited English proficiency populations

**DeepFakeDetector – *ML Engineer* *(Souce Code)***       *Aug 2024 - Dec 2024*
- Developed a production-ready deepfake detection system for digital forensic investigations. Converted multiple PyTorch deep learning models (BNext, Transformer, ResNet50) to ONNX format and integrated them into the RescueBox plugin architecture with RESTful APIs and auto-generated UI.
- Optimized inference pipeline using ONNX Runtime for real-time image classification (Real/Fake with confidence scores). Based on CVPR 2024 research, the module enables forensic investigators to efficiently analyze images through web and desktop interfaces, contributing to active digital forensics investigations.