

# Devi Eswar Kumar Damerla

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## PROFESSIONAL SUMMARY

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Full-Stack AI Engineer with 5+ years of experience architecting scalable production systems. Expert in building Agentic AI applications and end-to-end solutions using FastAPI, NestJS, and React, with deep specialization in LLMs, RAG, and Knowledge Graph architectures. Proficient in cloud-native MLOps (AWS SageMaker, Bedrock, ECS), microservices, and DevOps. Proven track record of delivering measurable business impact through technical innovation.

## PROFESSIONAL EXPERIENCE

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### Software Engineer - AI

AI for ALL LLC (AI OWL)

Nov 2024 – Present

Columbus, OH

- Lead Engineer for Flash AI, a CJIS-compliant evidence intelligence platform using RAG and multi-agent systems for secure law enforcement multimedia analysis.
- Architected multi-agent orchestration layer using MCP (Model Context Protocol) over JSON-RPC/SSE, facilitating autonomous agent collaboration and complex escalation workflows.
- Designed transformer fine-tuning pipelines using LoRA and QLoRA for legal domain adaptation, boosting semantic retrieval precision by 35% while slashing inference costs by 40%.
- Delivered sub-100ms hybrid search across 100K+ documents by integrating Neo4j knowledge graphs and Weaviate vector indices within AWS SageMaker microservices.
- Orchestrated asynchronous multimodal ingestion pipelines using WhisperX, OpenCV, and FFmpeg for audio-video transcription and scene understanding, accelerating processing time by 60% and enabling Vision-Language Model capabilities.
- Established Terraform MLOps pipelines for ECS Fargate and SageMaker, ensuring continuous model evaluation, immutable versioning, and strict audit compliance.
- Mentored junior engineers on RAG architecture design, LLM prompt engineering, and vector database schema optimization; contributed to AI product roadmap and strategic integration initiatives.

### Software Engineer

Airbus Group

Aug 2021 – Jul 2023

Bengaluru, India

- Boosted aircraft CAD model loading performance by 75% via a NestJS/Angular iPaaS microservice with optimized S3 caching strategies.
- Cut annual software costs by \$120K+ (60%) by replacing CATIA dependencies with a custom MEAN stack solution featuring WebSocket model streaming.
- Implemented OAuth SSO and standardized API documentation using Swagger/OpenAPI.
- Automated design quality checks and optimized SQL queries from 3+ minutes to under 60 seconds, accelerating data processing for 200+ engineering workflows.
- Configured CI/CD pipelines using Jenkins on AWS ECS Docker containers with SonarQube integration for code quality gates; executed smooth MariaDB-to-MySQL migrations with zero downtime.

### Junior Data Scientist

MCR Web Solutions

Aug 2019 – Jun 2021

Andhra Pradesh, India

- Architected optimized CNN models for image denoising, deblurring, and low-light enhancement using TensorFlow, achieving 83% structural similarity (SSIM) improvement through hyperparameter tuning and data augmentation.
- Engineered automated ML pipeline integrating preprocessing, training, and inference with Python, TensorFlow, and AWS Lambda, cutting processing latency by 60% and enabling on-demand image enhancement at scale.
- Deployed models as auto-scaling serverless microservices on AWS Lambda/Docker.
- Identified critical noise patterns in large-scale datasets to drive feature extraction strategy.

### Machine Learning Engineer Intern

TheSmartBridge Private Limited

May 2019 – Jul 2019

Hyderabad, India

- Created machine learning model for chronic kidney disease diagnosis achieving 95% accuracy using Naive Bayes, decision trees, and random forest algorithms; deployed as Django web application with user-friendly interface.

## EDUCATION

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### Master of Engineering in Computer Science

University of Cincinnati, College of Engineering and Applied Science

Apr 2025

Cincinnati, OH

- GPA: 3.67/4.0
- Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Cloud Computing, Software Engineering

PROJECTS

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- ArthaNethra — AI Financial Risk Investigator** | *Python, FastAPI, Neo4j, Weaviate, Angular*    Oct 2024 – Nov 2024
- **Financial AI Hackathon Finalist** — Engineered knowledge graph-native financial investigation platform mapping entities across 10-Ks, contracts, and invoices.
  - Designed dual-database architecture (Neo4j + Weaviate) enabling complex cross-document queries beyond traditional RAG capabilities.
  - Constructed hybrid extraction pipeline (LandingAI + Claude) achieving 99% accuracy at 80% lower cost than pure LLM approaches.
  - Built explainable AI chatbot with clickable PDF citations and interactive Sigma.js graph visualizations.
  - Deployed full-stack application via Docker Compose; reduced M&A due diligence time from 200+ hours to under 2 hours (90% reduction).
- Context-Driven Image Narration** | *React, Node.js, Python, TensorFlow, Transformers*                      Sep 2023 – Feb 2024
- Led MERN stack development of an image narration tool, achieving 79.7% object recognition accuracy via TensorFlow and Hugging Face Transformers.
  - Optimized model performance via transfer learning on large-scale datasets using pre-trained vision-language models.

TECHNICAL SKILLS

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- Programming Languages:** Python, JavaScript, TypeScript, Java, Go, SQL, C#
- AI/ML Technologies:** LLMs, RAG, Knowledge Graphs, Multi-Agent Systems, LoRA/QLoRA, Prompt Engineering, PyTorch, TensorFlow, scikit-learn, Hugging Face, LangChain, LlamaIndex, Pandas, NumPy, OpenCV
- Databases:** Neo4j, Weaviate, Pinecone, PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch
- Cloud & DevOps:** AWS (SageMaker, Bedrock, Lambda, ECS Fargate, S3), Docker, Kubernetes, Jenkins, CI/CD, Git
- Frameworks:** FastAPI, Flask, Django, Node.js, NestJS, Angular, React, Spring Boot, ASP.NET Core
- Development Practices:** Agile/Scrum, Microservices, RESTful APIs, TDD, MLOps, Model Governance

CERTIFICATIONS

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- AWS Certified Solutions Architect – Associate**
- Deep Learning Specialization** — DeepLearning.AI (Coursera)