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Hiring Manager

Apprentice Engineer - AI/ML Team

Dear Hiring Manager,

I am writing to express my strong interest in the Apprentice Engineer - Artificial Intelligence / Machine Learning position. As a recent MS Computer Science graduate from Lawrence Technological University with hands-on experience building production AI systems, I am excited about the opportunity to contribute to your team while continuing to grow as an ML practitioner.

In my current role as a Graduate Research Assistant, I have been working directly with Professor Paula Lauren on building agentic AI systems and ML-powered automation. I designed and deployed the CRE Research Agent, an end-to-end research automation workflow orchestrated in n8n, hosted on AWS EC2, and exposed via a Telegram bot webhook. This project required implementing multi-step tool calling, error handling, and logging to make the agent reliable enough for day-to-day faculty use.

What excites me most about this apprenticeship is the opportunity to learn from experienced engineers while applying my existing skills. My technical background includes:

  • Deep learning frameworks: PyTorch, TensorFlow, Transformers (HuggingFace)

  • LLM fine-tuning using QLoRA and 4-bit quantization, reducing GPU memory requirements while maintaining model quality

  • Building RAG systems with vector databases (Qdrant, pgvector) and embedding pipelines

  • MLOps practices including SageMaker Pipelines, model registry, and automated retraining

  • Production backend development in Python (FastAPI) and Go, serving enterprise clients like Ferrari and Boeing

I built a resume-optimization SLM pipeline that collected thousands of resumes and job descriptions, scraped postings, and used structured supervision with a local Qwen-2.5B model to fine-tune for resume-JD matching. This hands-on experience with the full ML lifecycle, from data collection to model deployment, has prepared me to contribute meaningfully from day one.

I am particularly drawn to apprenticeship programs because I believe the best way to grow as an engineer is through mentorship and real-world problem solving. I am eager to learn, quick to adapt, and committed to delivering quality work.

Thank you for considering my application. I would welcome the opportunity to discuss how my background and enthusiasm can contribute to your team.

Sincerely,

Harsha Vardhan Yellela