KAVIYATHAMIZHAN T K

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AI Engineer | Generative AI | LLMs | Agentic AI

PROFESSIONAL SUMMARY

Entry-level Computer Science graduate specializing in Artificial Intelligence, with a foundation in Python, machine learning, deep learning, and Generative AI. Experienced in developing AI/ML projects involving LLM applications, retrieval-augmented generation (RAG), agentic workflows, and model optimization. Proficient in applying machine learning frameworks and software development tools to build practical AI solutions, with a strong interest in solving real-world problems through emerging technologies.

EDUCATION

B.Tech Computer Science and Engineering with Specialization in AI — Sep 2022 – Jun 2026
Bharath Institute of Higher Education and Research — CGPA: 9.16/10

WORK EXPERIENCE

Sure Trust — Sep 2025 – Mar 2026
Machine Learning Engineering Intern — Remote

- Developed and evaluated BERT-based transformer NLP models for multi-class sentiment and emotion detection on social media datasets, integrating inference through REST APIs for structured AI outputs.
- Built and evaluated an ML-based cardiovascular risk prediction system using feature engineering and class balancing, applying F1-score and AUC-ROC with experiment tracking for reproducibility.

Ramco Cements Ltd. — Sep 2025 – Nov 2025
Data Analyst Intern — Chennai, TN

- Preprocessed and analyzed enterprise logistics datasets using data cleaning, transformation, and exploratory analysis to identify operational patterns and trends.
- Developed Tableau dashboards translating supply-chain analysis into visual insights to support data-driven decision-making across cross-functional teams.

TECHNICAL SKILLS

Programming & Backend: Python, SQL, FastAPI, REST APIs, Git, GitHub

Machine Learning & Deep Learning: PyTorch, Scikit-learn, NLP, LightGBM, Pandas, NumPy, Data Preprocessing, Feature Engineering, Classification, Regression, Model Evaluation

Generative AI & LLMs: LLMs, Generative AI, Transformers, Hugging Face, Prompt Engineering, Embeddings, RAG, Agentic AI, LoRA Fine-Tuning

RAG & LLM Engineering: LangGraph, Qdrant, BM25, Hybrid Search, LLM Evaluation

Deployment & Cloud: Docker, Hugging Face Spaces, Weights & Biases, Microsoft Azure, IBM watsonx

PROJECTS

CrisisGrid – Multi-Agent Disaster Response Intelligence System — *Agentic AI | LLM Fine-Tuning*

- Developed a multi-agent disaster-response system combining tool use, planning, and memory with GRPO-based post-training of Qwen 1.5B using LoRA adaptation.
- Implemented reward engineering and agent evaluation to investigate reward-alignment challenges in long-horizon multi-agent decision-making under uncertainty.
- **Tech:** Python, PyTorch, Qwen 1.5B, LoRA, GRPO, Hugging Face, Reinforcement Learning, W&B

VeritasOps – Evidence-Grounded Agentic RAG — *Agentic AI | RAG | LLM Evaluation*

- Developed a self-correcting RAG system for software-repository investigation, combining dense retrieval, BM25 hybrid search, cross-encoder reranking, query reformulation, and evidence grading for grounded technical question answering.
- Built an evaluation-driven retrieval pipeline with claim verification, citation-based evidence grounding, refusal handling, and controlled ablation experiments to measure retrieval quality, answer faithfulness, latency, and failure modes.
- **Tech:** Python, LangGraph, Qdrant, BM25, Transformers, Cross-Encoder, Hugging Face, FastAPI, RAGAS, Docker

AI Energy Consumption Optimizer — *AI Engineering | Forecasting | Optimization*

- Built an AI energy-management system combining LightGBM forecasting, Isolation Forest anomaly detection, and Linear Programming for demand prediction, abnormal-consumption detection, and cost optimization.
- Developed a FastAPI + React application providing 48-hour forecasts and optimization recommendations.
- **Tech:** Python, FastAPI, React, LightGBM, Isolation Forest, SciPy, Pandas

CERTIFICATIONS & ACHIEVEMENTS

- **Machine Learning Specialization** – DeepLearning.AI, Coursera
- **Top 800 Finalist** – Meta PyTorch OpenEnv Hackathon x Scaler School of Technology (31,000+ participating teams)