Bhuvana K S

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Software engineer with experience in AI agents, graph databases, and backend systems. Skilled in building multi-database integrations and graph-based analytics across production and POC environments.

WORK EXPERIENCE

Software Engineer (Specialist Programmer) December 2024 – Present
Infosys Ltd., Bengaluru

- Fine-tuned small language models (SLMs) such as Phi-4-mini (3.8B) and Qwen3 using parameter-efficient techniques (Low-Rank Adaptation, LoRA/QLoRA) with Unsloth on ~1,500 curated domain-specific Q&A pairs across ~20 business domains, specialising model responses for support-automation workflows.
- Integrated fine-tuned SLMs with Retrieval-Augmented Generation (RAG) over vector databases (ChromaDB, Pinecone) to keep domain knowledge current without full model retraining, and deployed quantised (4-bit, ~4 GB) models locally via Ollama for private, low-cost inference with no cloud dependency.
- Built multi-database API integrations and backend services using FastAPI and WebSockets across 3+ heterogeneous database systems (document, graph, and relational).
- Built an end-to-end ML pipeline using Python and MongoDB for data ingestion, preprocessing, model training, and serialisation.
- Developed a human-in-the-loop validation interface using Gradio with automated model retraining and champion model selection, cutting manual model-review effort by ~30%.
- Integrated AI agent workflows using MAF for intelligent automation across backend modules.

Software Engineer August 2024 – December 2024
Knowledge Lens Pvt Ltd., Bengaluru

- Owned the Root Cause Analysis (RCA) module for manufacturing plant asset-malfunction analysis, modelling and storing graph data in Neo4j and JanusGraph.
- Built V1 of the company's internal backend SDK enabling engineers to visualise multiple graph layouts through a single unified function call, cutting graph-visualisation boilerplate by ~50% for the engineering team.

Software Engineer Intern February 2024 – August 2024
Knowledge Lens Pvt Ltd., Bengaluru

- Handled WebSocket API for the FTDM chatbot feature; optimised Cypher and Gremlin queries in Neo4j and JanusGraph achieving 40% faster query performance and 25% reduction in data retrieval time.
- Built a Gremlin graph visualiser using vis.js and Python; led the Kafka version upgrade for Jublient's client module.

SKILLS

Languages: Python, C++, SQL, Gremlin, Cypher
AI and ML: Object Detection, MAF, SLM Fine-tuning, Unsloth, Hugging Face, Ollama, RAG
Backend: FastAPI, WebSockets
Databases: MongoDB, Neo4j, JanusGraph, ChromaDB, Pinecone
Tools: Git, vis.js, Gradio

EDUCATION

Bachelor of Engineering in Computer Science
Global Academy of Technology, Bengaluru 2020 – 2024
CGPA: 9.17

PUBLICATIONS

- ML-Based Graduate Admission Prediction. Published at the IEEE International Conference on Intelligent Systems, Communication and Applications (CIISCA 2023). View Paper

ACHIEVEMENTS

- Hackathon Judge: Invited as a judge at 3 college hackathons across Global Academy of Technology and Dayananda Sagar University (twice).
- Hackathon Winner, Evolve 2024: Secured 1st place in the office hackathon at Knowledge Lens.
- 1st Place, College Hackathon 2021: Built a complete front-end website using HTML and CSS.