AYRAF RAIHAN

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Education

Manipal Institute of Technology   Sep. 2022 – May 2026
Bachelor of Technology in Computer Science, Artificial Intelligence

Experience

Intel Technologies Pvt. Ltd.   March 2024 – September 2024
Project Intern   *Bengaluru-Hybrid*
- Created multiple AI-powered internal tools to optimize data processing and model performance.
- Gained hands-on experience with **LLM fine-tuning** techniques and explored **Graph Retrieval-Augmented Generation (RAG)** for enhanced data retrieval and understanding.

IEEE EPICS   September 2023 – 2024
IEEE Research Intern   *Bengaluru*
- Leading a team of 20+ members in designing and developing a multi-terrain autonomous rover using **LiDARs, sensors, edge computing, and ML**.

Omdena   January 2024 – May 2024
Generative AI Engineer   *Remote*
- Led the **LLM team of 30 engineers** across the globe for a mental health support chatbot using RAG architecture.

Optimum AI   February 2024 – May 2024
AI Researcher   *Remote*
- Contributed to a hierarchical multi-agent AI finance planner project, deployed on AWS.

Projects

AI-Powered Study Bot | *Python, LLM, Gemini Flash, Handwriting Recognition, LangChain, Streamlit*   October 2024
– Developed a study bot that processes course materials and handwritten notes to create a searchable knowledge base.
– Used **Gemini Flash** for handwriting recognition and **LangChain** to enable question generation from notes.
– Built the frontend in **Streamlit**, allowing users to query and generate exam questions based on their materials.

Microsoft Phi-2 SLM Fine-Tuning for Financial Sentiment Analysis | *QLoRA, Phi-2, Kaggle*   August 2024
– Fine-tuned **Microsoft Phi-2 SLM** using **QLoRA** for sentiment analysis on financial news data.
– Leveraged **Kaggle** for training dataset acquisition and model optimization.
– Enhanced sentiment classification accuracy for positive, negative, and neutral sentiments.

Chatbot for Mental Health Support | *Python, ChromaDB, LangChain, LLM, Hugging Face, Streamlit*   February 2024
– Created a mental health support chatbot using **RAG** to provide personalized emotional support.
– Integrated **ChromaDB** for context management and fine-tuned the model using **Hugging Face**.
– Deployed on **Hugging Face** with a **Streamlit** frontend for user interactions.

Text2SQL | *Python, Hugging Face, Streamlit, MySQL, Generative AI, Ollama, Docker, AWS*   February 2024
– Developed a solution to convert natural language to SQL using **SQL-Coder7B** and **RAG** architecture.
– Integrated **MySQL** for backend and deployed using **Docker** on **AWS**.

Technical Skills

Languages: Python, Java, C, C++, SQL
Technologies/Frameworks: Linux, GitHub, MongoDB, ChromaDB, Firebase, Keras, OpenCV, TensorFlow, LangChain, Figma, Neo4j, CUDA, LLMs, Hugging Face, Kaggle, Groq, Notion

Leadership / Extracurricular

Tech Solstice   April 2023
Tech Lead Ops   *MIT, BLR*
– Managed 50+ volunteers to ensure the success of MIT BLR's 2023 Tech Fest with events like hackathons involving 1000+ participants.

CodeX   February 2023 – September 2023
AI Research Lead   *MIT, BLR*
– Led the Research department in the largest coding club at MIT, BLR, contributing to multiple successful events.