



KARTIK SEHGAL

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Education

Indian Institute of Information Technology Guwahati

2022 – Present

Bachelor of Technology in Computer Science – CPI - 8.22

Guwahati, India

Technical Skills

Languages: C, C++, Java, Python, Bash Script, MySQL, Rust, HTML, CSS

Other Skills: Linux, Gemini API, Relational Database, Python Automation, LLM, Llama Models(2, 3, 3.1), OOPS, System Programming, Git, ChromaDb

Relevant Coursework: DSA, Discrete Maths, Linear Algebra, Optimisation Techniques, DBMS, OS, AI, ML, Cloud Computing, TOC, Networking

Work Experience

DRDO

July '24 – Present

Research & SWE Intern

Delhi, India

- Worked with various llama (2, 3, 3.1), Mistral etc.
- Researched the use of RAG (Retrieval Augmented Generation) to reduce computational power consumption by 10%.
- Technologies used: Python, LLMs like Llama (2, 3, 3.1), Mistral, etc.
- All of this was accomplished without using the Internet or Generative AI, as internet use was not permitted on the office premises.

SIEMENS

May '24 – July '24

SWE Intern

Noida, India

- Restructured and Developed 5 Messaging Protocols between HLC (High Level Control) and PLC (Programmable Logic Controller) in the BHS (Baggage Handling System) enhancing efficiency by 15%.
- Attained practical experience in HLC-PLC communication for 2 different types of BHS systems.
- Conducted extensive research on the operation of 2 distinct BHS types.
- Technologies used - Java 21, Git.

Projects

FRONT END GENERATOR | Python, Google's Gemini 1.5 pro, Streamlit | Link

- Developed an application in Python that generates HTML and CSS code from screenshots uploaded via a web interface.
- Employed Google's Gemini 1.5 Pro API to perform the task.
- Skills Demonstrated: API integration, Prompt Engineering, Python 3 Programming.

RAG Application Implementation | Python, LangChain, Ollama, Llama 3.1, ChromaDB

- Architected a RAG (Retrieval-Augmented Generation) Application using llama 3.1 running locally on the Machine.
- Engineered and maintained a Chroma vector store for efficient document retrieval, with database reset and incremental updates by Document ID, achieving data loading in under 30 seconds.
- Skills Demonstrated: Using Local LLMs, Using Vector DataBase, Python 3 Programming.

IRIS | Python, Google's Gemini 1.5 pro | (Under Development)

- IRIS is an AI-powered terminal assistant that boosts productivity by 25% by handling tasks like writing emails and opening YouTube.
- Utilized AppleScript, BashScript, and Python to automate tasks and enhance functionality.
- Skills Demonstrated: API Integration, Prompt Engineering, Python 3 Programming.

Technical Achievements

TOR Implementation (in C), Text Editor (in RUST), Shell (in RUST), Implemented "printf" command (in C), Implemented "malloc" command (in C), Made AI play Flappy Bird(in python), 100 day streak on LeetCode.

Leadership / Extracurricular

Student Gymkhana Council

September '23 - August '24

Quiz Club Coordinator

Indian Institute of Information Technology Guwahati

MUN

YUVAAN 2024

USG Hospitality

Indian Institute of Information Technology Guwahati