ATUL SINGH
Software Engineer

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WORK EXPERIENCE

Carelon Global Solutions India
(Associate Software Engineer III) | July 2023 - Present | Bengaluru, India

- **A**utomated a big data pipeline using PySpark and H2O PySparkling, to give best model for large dataset of 700K+ data points, used parallel processing to reduce features selection time for 18K+ features by 40%.
- Revamped an automated transformation system to simplify complex medical claims,by integrating **AWS Textract** for OCR processing, integerated **AWS S3 storage** into the pipeline,reducing runtime by 15% for OCR processing.
- Made Changes in the pipeline to generate,persist and reuse **OCR embeddings** for ML model processing reducing total runtime by 30%.
- Designed a backend system with FastAPI for chat application leveraging **LLM-RAG** system to query over 35+ HR related policy documents.
- Collaborated on a adaptive / self-reflecting RAG using LLM for making an Agentic Chatbot for sales assistance which reduces manual labour by 60%.

Carelon Global Solutions India
(Data Science Intern) | Hyderabad, India

- Implemented **Medical Text Summarizer** that reduces manual labour to read discharge summaries of patients by extracting relevant medical data keeping medical references intact for insights on related claims.
- Leveraged Machine learning techniques, including sentence ranking, K-Means clustering, and Bio-BERT, to enhance the summarization.
- Introduced parallel processing to summarise at line level , paragraph level, and page level to reduce runtime by 20%

PROJECTS

CocoBot (Mobile application) | Source Code

- Designed an **Agent Based workflow** for a **multi-functional chatbot** featuring guard, details, order-taking, and recommendation agents to streamline product queries and order placement which can reduce order placing by **40%**.
- Utilized open-source **LLMs(Large Language Models)** via Groq, deviced a **RAG (Retrieval Augmented Generation)** system to query about products.
- Developed a backend system with FASTApi for **user authentication and authorization,session management, MongoDB and caching** for a better chat experience.
- Created a frontend using React-Native for seamless use of the chatbot.

Instagreet (Web application) | Source Code

- Built a full-stack web social media platform using MERN stack, incorporating Redux Toolkit and Redux Persist for state management and data persistence.
- Integrated functionality like **sign up, sign up, post on feed, like / dislike a post, comment on a post, like / delete a comment.**
- Created an express server via Nodejs to build the backend with **User Authentication and Authorization** and Api's for effortless management of different functionality of the web app.
- Added chat functionality using socket.io for a real-time messaging experience.

EDUCATION

National Institute Of Technology,Karnataka (NITK) | (2019- 2023)
Bachelor Of Technology (B.Tech) in Information Technology
GPA:7.77

SKILLS

Languages:	Python,Java,JavaScript
Frameworks:	React.js, Node.js, FastAPI
Databases:	MongoDB, Redis, MySQL
Tools and Technologies:	Docker, Redis, SnowFlake, Machine Learning, LLMs,Generative AI, Git