Prerit Gupta

Portfolio : exylox.com | +91 8527553480 | preritgupta77@gmail.com | linkedin.com/in/preritgupta7/

PROFESSIONAL EXPERIENCE

Assistant Manager - Zydus Lifesciences, Ahmedabad   Nov 2023 - Present

AuditVision:

End-to-end solution combining an intelligent **OCR pipeline and a secure Django-based analytics platform** to automate FDA 483 audit data extraction, structuring, and visualization at scale.

- Built an end-to-end OCR pipeline processing 100+ FDA 483 documents using Python, Tesseract, OpenCV, and Poppler
- Developed secure Django analytics platform with interactive dashboards (Chart.js, Plotly, DataTables), role-based access, and audit trails
- Applied **custom morphological operations** for precise data extraction and integrated post-processing (regex, Pandas) with existing QA data
- Implemented automated data extraction solution, **saving QA teams 6 days weekly per audit and improving compliance reporting accuracy by 15%**

Retrieval-Augmented Generation (RAG):

- Designed and implemented a RAG-based document question-answering system using LangChain with Hugging Face LLMs (Mistral-7B, Falcon-7B) for regulatory text understanding
- Built a semantic retrieval pipeline with document chunking, embedding generation, and Chroma vector stores to enable efficient similarity-based search
- Implemented conversational retrieval with prompt-engineered context control, tuning top-k retrieval and similarity thresholds to **improve factual consistency and answer relevance by 20%**
- Used by internal teams to answer 100+ regulatory queries weekly, reducing manual document **lookup time from approximately 30 minutes to 4 minutes per query**

Summer Trainee - DHL, Mumbai   Dec 2022 - Jun 2023

- Supported data analysis and risk modeling processes across Mumbai distribution centers, analyzing operational metrics to strengthen compliance controls
- **Developed Python automation scripts for data processing workflows** (Pandas, NumPy), **reducing manual data analysis time by 40% and improving reporting accuracy**
- Collaborated with cross-functional teams to scope data requirements, develop analytical tools, and build standalone applications for streamlined compliance reporting

Supply Chain Analyst Intern - Sun Pharma, Mumbai   May 2022 - Jun 2022

- Analyzed Material Requirement Planning processes for US Supply Planning Team, identifying process gaps and optimization opportunities in report generation workflows
- Investigated data pipeline issues, discovered API code conflicts and redundant data columns, proposed automated on demand generation approach to improve efficiency

PROJECTS

Anti-CoVi-Bot: A Robot to combat COVID-19

- Developed and trained **custom CNN model for face mask detection**, achieving 95% accuracy through iterative model optimization and validation on real-world datasets
- Implemented computer vision pipeline using **MobileNet SSD** for real-time person detection and Euclidean distance calculation, enabling automated social distancing assessment

SKILLS

- Languages: Python (Pandas, NumPy, OpenCV, regex), SQL
- Data Science & Machine Learning: Data wrangling, classification, OCR, NLP pipelines, embeddings, vector search
- Front-End & Visualization: Django, Chart.js, Plotly, DataTables, Tableau
- Tools: SAS, Power Automate, Git, LangChain, Chroma, FAISS, Tesseract, OpenCV

PUBLICATIONS

IEEE - Anti-CoVi-Bot: A Robot to combat COVID-19

- Presented in the 3rd IEEE Bombay Section Signature Conference 2021 (Link - <u>Click here</u>)
- **3rd Best Paper Award**

IEEE - Technology in a fight against COVID-19

- Presented in the IEEE Region 10 Symposium TENSYMP 2022 (Link - <u>Click here</u>)

EDUCATION

Master's of Technology in Artificial Intelligence - NMIMS MPSTME, Mumbai

Bachelor's of Technology in Mechatronics - NMIMS MPSTME, Mumbai