Rohil Bansal

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Github | Linkedin | Portfolio

WORK EXPERIENCE

Data Science Intern | Publiq Studio
July 2024 - Present
Remote

- Worked on the development and optimization of **bulk listing modules**, collaborating with cross-functional teams.
- Executed live testing and data validation, ensuring robust performance and accuracy.
- Implemented multiprocessing, efficiently parallelizing code, improving throughput by 5-fold for real time outputs.

SKILLS

Machine Learning Tools: PyTorch, Transformers, OpenCV, Langgraph, Langchain, MLflow
Programming Languages: Python (Advanced), C++ (Basic), MySQL (Proficient), Bash
Other Technical Skills: Docker, Git, Github Actions, Streamlit, Django, Fast API

COURSEWORK

Object-Oriented Programming, Data Structures and Algorithms, Operating Systems, Machine Learning, Data Mining and Warehousing, Data Analytics, Probability and Statistics, Cloud Computing, Computer Vision

EDUCATION

Dr. B.R. Ambedkar National Institute of Technology, Jalandhar | Bachelor of Technology in Computer Science 2021-25

PROJECTS

StudyChat | Python, Django, Django REST API, SQLite | Github
- **Backend Development**: Created a fully functional chat-room web app which allows forum-like discussions on chosen topics. Engineered the backend on Django with SQLite database for quick local querying.
- **Authentication and Authorization**: Implemented user authentication and task authorization for CRUD functionalities.

Legal Ally Chat Bot | Langgraph, AzureOpenAI, Pinecone, Adaptive RAG, Streamlit, Huggingface| Huggingface | App
- **Chatbot Development**: Developed an advanced chatbot using Langgraph and Pinecone, optimizing retrieval. Implemented proper input-output safety guardrails, output quality checks, as well as web search for optimal experience.
- **Performance Optimization**: Enhanced response speed by more than 15% by optimizing for document relevance, delivering quicker and more accurate interactions.

Pix2Pix Photo Colorizer | Python, Pytorch, OpenCV, Huggingface, Mlflow, Boto3 (AWS), Airflow| Huggingface | App
- **Model Training**: Built and trained a Pix2Pix GAN model on the ImageNet-1k dataset, achieving superior realistic colorization results. Reduced the training time by 12% optimizing batch streaming.
- **Continuous Deployment**: Implemented an Airflow pipeline for automating model retraining pipeline. and deployment, with performance tracking facilitated by MLflow. Deployed the app using Huggingface spaces.

Semi-dense Monocular Visual SLAM | Python, OpenCV, Computer Vision, g2o, Open3d | Github | Paper Link
- **Implementation**: Developed a Direct monocular visual SLAM algorithm using OpenCV and g2o
- **Visualization**: Utilized Open3d for visualizing results.
Enhanced understanding of Computer Vision and 3D reconstruction systems. Showed good proficiency in implementing deep learning research papers, as well as understanding core machine learning concepts.