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Hamza Abid

Data Scientist

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Data Science graduate with experience in data analysis, AI, machine learning, computer vision, and op- erations management. Skilled in Python, R, SQL, and Excel to solve real-world problems, optimize processes, and support data-driven decisions. Strong communicator, team collaborator, and problem solver.

SKILLS

Languages: Python, R, SQL, Java, PHP

Libraries/Frameworks: PyTorch, TensorFlow, Scikit-learn, OpenCV, Matplotlib, Pandas, Numpy,

Tools & Platforms: Jupyter Notebook, Colab, Git, RStudio, LaTeX, Markdown, Docker, AWS, Power BI, Flask, n8n

Domains: Machine Learning, Deep Learning, Computer Vision, NLP, Generative AI

EXPERIENCE

Generative AI Intern

Sep 2024 — Dec 2024

Kuality Soft, Gujranwala (On-site)

- Developed and fine-tuned Large Language Models (LLMs) for domain-specific text generation using OpenAI API.
- Built Al-powered summarization pipelines to convert lengthy documents and datasets into concise, actionable insights.
- Designed prompt engineering strategies to improve model accuracy and relevance in responses.
- Integrated Generative AI capabilities into internal tools for automated content creation and report generation.

PROJECTS

Final Year Project — Zero-Shot Multimodal Video Anomaly Detection

- Developed a *training-free* anomaly detection system combining **visual, audio, and language** cues using Vision-Language Models (VLMs), Audio-Language Models (ALMs), and Large Language Models (LLMs).
- Designed and implemented caption alignment, filtering, and rationale evaluation for improved noise resilience and interpretability.
- Achieved up to 3.66% accuracy improvement on benchmark datasets (UCF-Crime, XD-Violence, ShanghaiTech, UCSD ped2).
- Created a cloud/web-based interface for real-time monitoring and alerting.
- Technologies: Python, PyTorch, TensorFlow, OpenCV, Docker, Google Colab

LLM-Based RAG Callbot for Inbound and Outbound Calls

- Designed and deployed a callbot leveraging Large Language Models (LLMs) with a Retrieval-Augmented Generation (RAG) pipeline for contextual and accurate responses.
- Integrated **OpenAl APIs** with **Twilio Voice** to handle real-time inbound and outbound calls, enabling natural, human-like conversations.
- Implemented dynamic knowledge retrieval from custom databases and documents to answer domain-specific queries.
- Optimized for low-latency call handling and improved accuracy through prompt engineering and context filtering.
- Technologies: Python, OpenAI API, Twilio Voice API, FastAPI, LangChain, PostgreSQL, Docker.

LLM-Based Customer Support Chatbot

- Developed an AI-powered chatbot using Large Language Models (LLMs) to handle customer queries in natural language.
- Integrated OpenAI GPT API for contextual and dynamic responses.
- Implemented conversation history tracking for better query resolution.
- Deployed the system as a web application with Flask for real-time user interaction.

EDUCATION

Bachelor of Science in Data Science, GIFT University, Gujranwala FSC (Pre-Medical), KIPS College, Gujranwala

2021 – 2025

2019 - 2021

ACHIEVEMENTS & ACTIVITIES

- Achieved **1st position** in 1st, 3rd, and 6th semesters.
- Secured 1nd position in the *Innovative 2.0 Final Year Project Competition* among four different universities.
- Completed Exploratory Data Analysis for ML by IBM

June 2025

• Completed short course on **Fundamentals of Agents & Development** by Hugging Face Agent Course

August 2025