

MUHAMMAD HASHIR SULEMAN

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GitHub

SUMMARY

Computer Science student passionate about AI, ML, and Data Science, skilled in NLP, LLMs, and Computer Vision. Experienced in MERN stack development and eager to build impactful, data-driven solutions.

EDUCATION

Capital University of Science and Technology, Islamabad

2022 – 2026

BSCS - Bachelors of Computer Science - **CGPA - 4.0**

Islamabad, Pakistan

Punjab College of Science and Humanities for Boys , Kahuta

2020 – 2022

ICS - Intermediate - **Percentage - 94.73**

Kahuta, Rawalpindi

Azeem Public School, Kahuta

2018 – 2020

Matriculation - Computer Science - **Percentage - 92.64**

Kahuta, Rawalpindi

COURSEWORK / SKILLS

- | | | | |
|---------------------------|----------------------------------|----------------------|----------------|
| • Python | • Natural Language Processing | • Computer Vision | • HTML & CSS |
| • Artificial Intelligence | • Large Language Models | • Langchain | • JavaScript |
| • Machine Learning | • Retrieval Augmented Generation | • Prompt Engineering | • React.js |
| • Data Science | | • DBMS / SQL | • Node.js |
| • Neural Networks | | • MongoDB | • Git & Github |

EXPERIENCE

Data Scientist Intern

Jul 2025 – Sep 2025

Eziline Software House Pvt Ltd

Islamabad, Pakistan

Worked on impactful AI/ML initiatives, applying data science techniques to solve practical challenges and deliver innovative solutions, including:

- Developed **TutorAI Personalized Learning System** with recommendation models for adaptive education.
- Built an **AI Voice & Database Agent** enabling natural language queries over structured datasets.
- Implemented **Cyber Abuse Detection (Roman Urdu)** using classical ML and deep learning approaches.
- Brain Tumor Segmentation MRI 2D/3D:** Designed an automated system using 2D U-Net with EfficientNet-B0 encoder, achieving a Dice score of 90.27% across tumor regions and deployed a Streamlit app for real-time MRI analysis.

PROJECTS

TutorAI - Personalized Learning System | Python, Django, MySQL, React, ML, NLP

2025

- Developed an AI-powered learning system that adapts to students' strengths, weaknesses, and learning styles.
- Implemented personalized content recommendations, quizzes, and study plans using machine learning models.
- Built a Django REST API with MySQL for storing and analyzing student progress data.
- Designed an interactive frontend (React) for seamless student-system interaction.
- Integrated NLP for analyzing student queries and providing intelligent, context-aware feedback.

AI Voice and Database Agent | Python, LangChain, LLMs, Voice AI, Database Agents

2025

- Built an AI Voice Agent capable of real-time, natural conversations using LLMs and speech-to-text/text-to-speech pipelines.
- Developed a Database Agent to query structured data, execute SQL operations, return context-aware responses.
- Integrated LangChain and vector databases to enable memory, reasoning, and multi-turn interactions.
- Explored production-ready deployment patterns for scalable AI agents in real-world applications.

Cyber Abuse Detection in Roman Urdu | Python, scikit-learn, BERT, Flask

2025

- Processed and cleaned Roman Urdu text data and extracted features using TF-IDF and BERT embeddings.
- Trained and compared multiple models, including MultinomialNB, LinearSVC, Random Forest, BERT-BiLSTM, and BERT-BiLSTM with attention.
- Evaluated model performance using confusion matrices and key metrics (e.g., precision, recall, F1-score).
- Developed a Flask-based web app for real-time cyber-abuse detection using the trained models.

Brain Tumor Segmentation MRI 2D/3D | Python, TensorFlow, EfficientNet-B0

2025

- Developed an automated multi-class brain tumor segmentation system for MRI scans using a 2D U-Net architecture with an EfficientNet-B0 encoder.
- Converted 3D volumes into 2D slices across four MRI modalities (T1, T1ce, T2, FLAIR), using tumor-focused sampling to improve model efficiency.
- Achieved an overall Dice score of 90.27%, with individual scores of 89.41% (necrotic core), 90.34% (edema), and 91.05% (enhancing tumor), and 98.84% accuracy.
- Created a Streamlit web app enabling real-time MRI upload, interactive slice navigation, and quantitative tumor segmentation analysis.

Emotion Classification Model- DistilBERT | Python, PyTorch, Transformers, Gradio

2024

- Implemented a multi-label emotion recognition system detecting up to 28 emotions (e.g., Gratitude, Amusement, Fear) from text using DistilBERT.
- Handled class imbalance with Focal Loss (0.25,2.0), class weighting; optimized prediction thresholds.
- Evaluated using comprehensive metrics: Accuracy (0.4404), F1-micro (0.5625), F1-macro (0.4776); top-performing emotions include Gratitude (F1 = 0.91), Amusement (0.80), Love (0.77).
- Built an interactive Gradio web interface for real-time emotion detection and demonstration.

CERTIFICATIONS

- Google AI Essentials - Coursera
- Building RAG Agents with LLMs - Nvidia
- Getting Started with AI on Jetson Nano - Nvidia
- Building Your Own Database Agent! - DeepLearning.AI
- Ultimate Job Ready Data Science Course - CodeWithHarry

EXTRACURRICULAR

- Developed WildQuest Islamabad Q&A app prototype for biodiversity at CUST Hackathon 2025 — May 2025
- Actively involved in student-run technology initiatives. Dec 2024