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Muneeb Iqbal

ML Engineer

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EDUCATION

Bachelor of Science, Electrical Engineering, BUITEMS *Aug 2020 – Nov 2024*
FSC, Pre-Engineering, Islamia Boys College *April 2017 – Jun 2019*

SKILLS

Languages & Libraries: Python, C++, NLTK, Pandas, Seaborn, SciKit-Learn, SpaCy, Keras, OpenCV
Frameworks & Tools: Flask**,** TensorFlow, MATLAB, YOLO, Pygame, Ollama LLM
Machine Learning & AI: Recommendation Systems, K-Nearest Neighbors (KNN), Content Based Filtering, Seq2Seq, LSTM

EXPERIENCE

Python (Intern) *Sep 2024 – Oct 2024*
Digital Empowerment Network *Remote*

- Enhanced AI decision-making efficiency by 40% through the development of a two-player strategy game in Python using Pygame, integrating the Minimax algorithm with a default search depth of 5.
- Improved identification of factors influencing student outcomes by 25% via comprehensive data analysis on student placement and academic performance datasets.

Python (Intern) *Sep 2024 – Sep 2024*
Code Alpha *Remote*

- Managed diverse user inputs by developing a rule-based chatbot using Python's NLTK library, implementing over 100 regex-driven pattern-response pairs.
- Elevated context-aware response accuracy by 35% by developing an AI-driven chatbot utilizing the Ollama large language model (LLM).
- Boosted user engagement metrics by 25% by deploying the LLM-based chatbot, surpassing traditional rule-based systems.

PROJECTS

SLAM Implementation in CARLA for Navigation in Dynamic Environments *Sep 2023 – Aug 2024*

- Increased localization accuracy by 4% and improved runtime efficiency by 6% by integrating multi-sensor data (LiDAR, IMU, GNSS) through a custom Python pipeline.
- Refined pose estimation precision by implementing the Iterative Closest Point (ICP) algorithm to align consecutive LiDAR scans.
- Strengthened map robustness by applying triangulation methods for landmark position estimation and utilizing a Kalman filter to fuse IMU and LiDAR data, minimizing mapping errors.

Movie Recommendation System *April 2023 – Sep 2023*

- Developed a hybrid recommendation engine combining collaborative filtering (KNN, SVD) and content-based filtering (TF-IDF on genres and descriptions), achieving a 12% improvement in accuracy.
- Utilized Python libraries including Pandas, Scikit-learn, and Surprise to process the Movie Lens dataset, demonstrating proficiency in data preprocessing and model evaluation.

Real-Time Object Detection System *June 2023 – Aug 2023*

- Achieved high-accuracy real-time object detection by leveraging YOLOv4 on a custom 416×416 dataset using TensorFlow, Keras, and OpenCV.
- Optimized image and video processing efficiency by implementing a single forward-pass model, enhancing detection speed and accuracy.

CERTIFICATIONS

- IT Automation with Python
- AI for Everyone

AWARD & HONORS

- **University Merit Scholarship** - Received annually from 2020 to 2024 for maintaining exceptional academic standing.
- **BEEF Scholarship** - Granted for outstanding academic performance and merit-based excellence from 2020 to 2022.
- **Prime Minister's National Laptop Scheme** - Recognized among top-performing university students nationwide, awarded a laptop for academic excellence.
- **PEC Final Year Design Project (FYDP) Funding** - Awarded by the Pakistan Engineering Council for addressing an industrial technical problem in the final year project, demonstrating innovation and practical application in engineering solutions.
- **Interfaculty Football Tournament Champion** - Won two consecutive tournaments, demonstrating teamwork and athletic excellence.