MUHAMMAD HASSAN

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Technical Skills

Python	C++	Flutter	Java
SQL	MongoDB	Firebase	Git
Chatbot Development	Reinforcement Learning	Computer Vision	Prompt Engineering
Digital Marketing (SEO)	Beautiful Soap & Browser Automation	Generative Artificial Intelligence	Natural Language Processing

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Professional Experience

Digital Minds   AI Engineer and Digital Marketing Manager
June 2024 – March 2025

- **Chatbot Assistant – [Python, DialoGPT, OpenAI API, Prompt Engineering]**
  - Built a sophisticated conversational system leveraging DialoGPT (trained on 147M Reddit exchanges) for near-human multi-turn dialogue.
  - Employed OpenAI API–based prompt engineering to generate context-consistent, relevant responses, significantly reducing manual support overhead and enhancing user satisfaction.
- **SEO for Digital Minds Website**
  - Conducted both on-page and off-page SEO strategies to boost the site's search engine visibility. Implemented technical optimizations (e.g., streamlined URLs, meta tags, and sitemaps) and targeted a range of high-ranking, low-competition keywords, driving increased organic traffic and improved overall search rankings.

Colossal Innovations   AI Engineer   June 2023 –
September 2023

- **WhatsApp Automation System – [Python-based Digital Marketing Tool]**
  - Created at Colossal Innovation to streamline mass WhatsApp outreach for product promotion, allowing thousands of contacts to be added and messaged at the click of a button.
  - Automated message scheduling via Python scripts with browser-based control, and employed Beautiful Soup to scrape user contact details or promotional templates from external sources.
  - Maintained chat logs and scheduling data in MongoDB, enabling reliable, targeted digital marketing and boosting overall sales engagement.

Research Projects

- **AI Eye Guide - FYP – [Python, YOLO v8, Roboflow, Flutter, Document Reading, Feedback,**

MongoDB]
- ○ Drew on Google Scholar research to develop a four-module solution assisting visually impaired users with object detection, currency recognition, text reading, and user feedback. Trained detection models on thousands of labeled images (including 1,000+ for local currency) to achieve real-time performance, and integrated text-to-speech for English text recognition.
- ○ A unified mobile interface streamlined interactions, while cloud-based storage captured user feedback for continuous improvement.
- ○ Combined a robust environment for high-accuracy real-time detection, cross-platform mobile development, rapid data labeling and augmentation, and secure, scalable feedback management—ensuring both accessibility and adaptability for everyday use.
- **Currency Detection – [Python, Flutter, YOLO v5, ML, Roboflow]**
  - ○ Implemented a real-time currency recognition system capable of identifying multiple currencies with over 90% detection accuracy. Trained a YOLO v5 model using labeled datasets from Roboflow, then served the model via a Python backend.
  - ○ Built a companion Flutter front end that supports on-device inference for instant feedback.
- **Hangman Game – [Python, ML, BERT, Reinforcement Learning]**
  - ○ Incorporated a pretrained BERT language model to predict likely letters and applied reinforcement learning (Q-learning) to refine guesses based on game feedback. Achieved a 70% reduction in average wrong guesses compared to a random baseline.
  - ○ Utilized Hugging Face Transformers for BERT integration and systematically improved accuracy through iterative training.

Certifications
- Introduction to Artificial Intelligence (AI) (Certificate)
- Python Project for Data Science (Certificate)
- Data Visualization with Python (Certificate)
- Data Science Methodology (Certificate)
- Introduction to social media marketing (Certificate)
- Fundamentals of social media advertising (Certificate)

Education

Bachelor of Science (Computer Science)
Artificial Intelligence
Software Engineering

RIPHAH International University – Islamabad