

M.Hamza Rehman

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EDUCATION

Foundation University School Science Technology

Bachelor of Science in Computer Science

Islamabad, ICT

Sept. 2021 – Present

- **Relevant Coursework:** Artificial Intelligence, Machine Learning, Data Structures and Algorithms, Object-Oriented Programming, Computer Organization and Assembly Language, Database Systems, Operating Systems, Image Processing.

PROFESSIONAL EXPERIENCE

Machine Learning Intern

Ezitech Institute

Machine Learning Intern

July 2024 – Present

On-site, Pakistan

EziTech Institute is recognized for its dedication to equipping young professionals with the vital skills necessary for success in the fast-paced world of technology. Their internship programs are well-regarded for offering students practical, hands-on experience that prepares them to tackle the challenges of the IT industry.

PROJECTS

Cotton Disease Detection | Machine Learning Engineer | August 2024

<https://github.com/HamzaMLDS/Cotton-Disease-Detection>

- **Developed a deep learning-powered app** that assists farmers and agronomists in identifying common cotton leaf diseases, including Bacterial Blight, Curl Virus, and Fusarium Wilt.
- **Implemented real-time image analysis** for accurate disease prediction, providing instant results through a user-friendly interface.
- **Supported early detection and targeted interventions**, enhancing crop protection and improving yields.

Object Detection System | Machine Learning Engineer | July 2024

<https://github.com/HamzaMLDS/Object-Detection-YoloV3>

- **Engineered** an advanced object detection system utilizing deep learning techniques to identify and classify objects in real-time.
- **Developed** the model architecture based on YOLO (You Only Look Once) and Faster R-CNN frameworks for high accuracy and speed.
- **Optimized** the system for various hardware environments, including GPUs and embedded systems, to ensure performance efficiency.
- **Implemented** transfer learning and fine-tuning strategies using PyTorch, resulting in improved model generalization on diverse datasets.

Gesture Detection System | Machine Learning Engineer — August 2024

<https://github.com/HamzaMLDS/Gesture-recognition-system>

- **Developed a real-time hand gesture detection system** utilizing MediaPipe and OpenCV to process video streams.
- **Implemented gesture recognition** to identify common hand gestures like "Fist," "Victory," "Thumbs Up," and "Open Hand" using a custom algorithm.
- **Enhanced system accuracy and responsiveness** by experimenting with different model architectures and tuning hyperparameters.

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL (MySQL, PostgreSQL)

Frameworks: TensorFlow, PyTorch, Keras, OpenCV, MediaPipe, YOLO

Developer Tools: GitHub, VS Code, Streamlit, MiniConda, Jupyter