Muhammad Hassan Saleem

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ABOUT ME

I'm a passionate and driven AI enthusiast with a knack for solving complex problems. From designing and implementing machine learning algorithms to tinkering with robots, I'm always eager to push the boundaries of what's possible with technology. I am constantly seeking to learn and grow in the field and am excited to work on impactful projects that challenge me. Let's create something awesome together!

WORK EXPERIENCE

Junior Machine Learning Engineer

Cyberify [01/05/2022 – 04/2023]

City: Multan

Country: Pakistan

- Collaborated with cross-functional teams to develop and implement **machine learning models and algorithms.**
- Built and optimized **data pipelines** and workflows for processing large amounts of data.
- Developed and deployed Python-based machine learning models using popular libraries such as **scikit-learn, TensorFlow, and Keras**.
- Implemented computer vision solutions for **object detection, Image processing** and tracking using **OpenCV and Pytorch**.
- Designed and executed experiments to test the performance of machine learning models and algorithms.
- Worked on both **supervised and unsupervised learning problems**, including classification, regression, and clustering.
- Experience in containerization of machine learning models and applications using **Docker** for portability and reproducibility.
- Ability to create **Docker images and containers** for running ML models and services in production.
- Proficient in using version control tools like **Git and SVN** for source code management
- Utilized cloud computing platforms such as **AWS and GCP** to deploy and scale machine learning solutions.
- Contributed to open-source projects related to machine learning and data science.

Python Developer

Cyberify [01/12/2021 – 30/04/2022]

City: Multan

Country: Pakistan

- Proficient in Python with experience in writing and maintaining **Python** applications and scripts for various use cases
- Familiarity with software development tools and environments, such as **Jupyter notebooks ,Google collab, PyCharm,** a nd **Visual Studio**
- Developed and deployed machine learning models using Python libraries like **Scikit-Learn, OpenCV , TensorFlow, and Pytorch**
- Knowledge of containerization technologies such as **Docker** and experience in using them for software deployment and testing
- Developed web applications using Python web frameworks like **Django and Flask**
- Proficient in Python libraries like **NumPy, Pandas, and Matplotlib** for data manipulation and visualization
- Familiarity with mobile app development using Python frameworks like **Kivy**
- Basic knowledge of **C++ programming** for low-level optimization and interfacing with machine learning libraries
- Basic Experience in deploying Python applications on cloud platforms - **AWS and Google Cloud**

Test engineer

Changan Motors [01/07/2021 – 23/11/2021]

City: Multan

Country: Pakistan

- Supervise Activities of Mechanical Workers

- Inspecting and **testing** Vehicles
- **Inspecting cars** to ensure they meet standards
- Recording Information and writing reports

EDUCATION AND TRAINING

MEng Artificial Intelligence for smart sensor and Actutors - Computer Science
Deggendorf Institute of Technology [15/03/2022 – Current]

Address: Dieter-Görlitz-Platz 1, 94469 Deggendorf (Germany)

BSc in Mechanical Engineering
Ghulam Ishaq Khan Institute of Engineering Sciences and Technology [03/09/2017 – 28/07/2021]

Address: Tarbela Road, District Swabi, Khyber Pakhtoon Khwa, 23640 Topi (Pakistan)

LANGUAGE SKILLS

Mother tongue(s): **Urdu**

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

German

LISTENING A2 **READING** A2 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

DIGITAL SKILLS

Computer Skills

Python / C++ / ROS(Robot Operating System) / Machine Learning / Deep Learning / Computer Vision

Mechanical Design Skills

Ptc Creo / DS Solidworks (Optimal Knowledge) / ANSYS

Microsoft Skills

Microsoft Excel / Microsoft Word / Microsoft Powerpoint

PROJECTS

Automatic Parking System using LIDAR
[01/10/2022 – 30/01/2023]

- Developed an innovative Automatic Parking System that leverages **LiDAR technology** to accurately detect and navigate parking spots
- Utilized a Wall-Following Algorithm to **map the environment** and ensure precise parking maneuvers
- Laser values from the LiDAR sensor used for detecting parking spots with high precision and Implement as well on **Gazebo**
- Employed the **A-star Algorithm** for **Path-Planning** to ensure the shortest and most efficient route to the parking spot
- Successfully integrated the system into **Turtlebot3**, showcasing strong programming and technical skills

Speech Command Recognition
[15/10/2022 – 25/01/2023]

- Developed a Speech Command Recognition system that can recognize different commands using machine learning techniques
- Utilized the torchaudio library from the **PyTorch** package to load and resample the audio signals
- Built a M5 **CNN Neural Network** for training the model to recognize the different commands
- Used the **matplotlib** library for data visualization to better understand the model's performance
- **TensorFlow** was also utilized for visualizing the learning and training of dataset.

Car Detection System
[01/12/2022 – 20/01/2023]

- Developed a vehicle object detection system using digital **image processing** for effective traffic engineering decisions and monitoring systems
- Utilized the Haar-cascade feature and **machine learning techniques** to create a powerful classifier for swift removal of background areas in an image
- The project was developed using **Visual Studio** software and the **Python programming language**

- Required packages include **OpenCV, Numpy and Tkinter**

Motor Control Speed Using ESP32

[15/03/2022 – 30/06/2022]

- The project is about controlling the speed of a DC motor using a **PI controller.**
- An **ESP32 microcontroller** with an **L298N motor driver** was used to build the hardware setup.r.
- The code was programmed on the **Arduino ID**E and tested, but there were deviations and disturbances in the values.
- A PI controller was implemented to set the RPM near the target value and to achieve high precision.
- A **low pass filter** was used to eliminate the higher frequency disturbances produced by the motor

Four Wheel Steering System - Bachelor Thesis

[01/06/2020 – 31/03/2021]

- Created a four-wheel steering system using **PTC Creo** and **SolidWorks** software.
- Utilized advanced modeling techniques to design the system with precision and accuracy.
- Conducted simulations of the system using **ANSYS** to evaluate its performance and ensure its reliability.
- Developed detailed technical drawings and specifications for the system, including parts lists and assembly instructions.
- Collaborated with a team of engineers and designers to refine the design and optimize the system's functionality..
- Conducted thorough testing of the system to ensure that it met all performance and safety requirements.
- Achieved success in creating a highly functional and reliable four-wheel steering system that met all project requirements

HONOURS AND AWARDS

Member, American Society of Heat ,Refrigeration and Air conditioning Engineer (ASHRAE) - GIKI Chapter

ASHRAE

System Administrator of university's Facebook Page – GIKI Admission Guidelines

Ghulam Ishaq Khan Institute of Engineering Sciences and Technology

HOBBIES AND INTERESTS

Playing Football and Cricket

Watching Documentaries Movies