

Muhammad Mazhar

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Portfolio: <https://mm-mazhar.github.io/mmazhar.github.io/>

SUMMARY

ML Engineer with strong analytical skills and proficiency in Python, TensorFlow, and PyTorch. Successfully contributed to projects like soil nutrient prediction and 3D roof reconstruction for solar energy optimization. Eager to leverage technical expertise to drive innovation and insights as a Python Engineer or ML Engineer or Data Analyst.

WORK EXPERIENCE

Omdena Inc.

ML Engineer (Internee)

May 2024 - Present

Remote

- Developed a soil nutrient **prediction model** to enhance fertilizer recommendations, utilizing **Python** and **machine learning** techniques to improve agricultural efficiency
- Conducted exploratory **data analysis** and **modeling** for SOC, Boron, and Zn, using **Python**, **Matplotlib**, **Seaborn**, and **Scikit-Learn**, leading to the development of **APIs** with **FastAPI** and **Streamlit** for **data visualization** and accessibility
- Implemented 3D roof reconstruction using **computer vision** techniques to optimize solar energy capture, enhancing energy efficiency for residential and commercial buildings
- Contributed to the development of a 3D reconstruction model by implementing the **PointNet Segmentation Model** to identify rooftops, improving the accuracy of **point-wise segmentation** and **data cleaning** processes
- Identified potential areas for urban agriculture in Milan, Italy, using **data analysis** and **geographic information systems** to support sustainable urban development
- Led task 1 of the Omdena challenge by collecting data from **Google Earth Engine**, performing **EDA** and **visualization**, and developing a web app using **Python**, **JavaScript**, **GDAL**, **Rasterio**, and **GeoPandas**, which improved the efficiency of satellite imagery processing.
- Projects Completed:
 - [Soil Nutrient Prediction for Enhanced Fertilizer Recommendations](#)
 - [3D Roof Reconstruction with CV for Solar Energy Optimization](#)
 - [Identifying Potential Areas for Urban Agriculture in Milan, Italy](#)

Freelance

WordPress Developer

Jan 2016 - 2024

Remote

MK Engineering Services, Pakistan

Assistant Manager Purchase

Jan 2012 - 2016

Pakistan

MK Engineering Services, Pakistan

Procurement Officer

Jan 2009 - 2012

Pakistan

MK Electronics, Pakistan

Electronics Engineer (R&D)

Jan 2003 - 2005

Pakistan

SKILLS

- Languages:** Python, JavaScript
- Frameworks:** TensorFlow, PyTorch, Scikit-Learn, OpenCV
- Data Visualization:** PowerBI, Plotly
- Databases:** MySQL, PostgreSQL, Redis, Firebase
- Scraping:** Selenium, BeautifulSoup
- Web Frameworks:** FastAPI, Flask
- Markup Language:** HTML
- Design Language:** CSS

EDUCATION

The University of Northampton, England

MBA, Business Administration

May 2008

NED University of Engineering and Technology, Karachi, Pakistan

Bachelor of Engineering, Electronics

Jan 2003