FARAN MASOOD PEERZADA

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RESEARCH INTEREST

My primary field of research interest is Artificial Intelligence (AI). Within AI, I am interested in problems related to probabilistic modeling, Machine Learning, and Remote Sensing, and their interdisciplinary applications to Precision Agriculture. I have found the applications in Precision Agriculture to be exciting not only because of their practical value but also as an inspiration for new types of problems that prompt the development of new theories and algorithms that have not been investigated before.

EXPERIENCE

❖ **Working as Python developer on Upwork** — **October 2022 – Continue**

❖ **Centre of Agriculture and Bioscience International (CABI) Regional Research Centre, Rawalpindi, Pakistan**

> ❖ **Worked as a Consultant for IT and Digital Tool development under Project titled "Plantwise Plus"** — **July 2021 – October 2022**
>
> **Key Responsibilities:**
> - Designing and developing analysis systems to extract information from large-scale data.
> - Applying data mining techniques to Harmonize Plantwise e-clinic data.
> - Implementing Machine learning techniques on Plantwise data to achieve desired results.
>
> ❖ **Worked as Machine Learning Expert on a Project titled "Mapping and Estimating Parthenium hysterophorus using Unmanned Aerial Vehicle Imagery"** — **October 2020 – June 2021**
>
> **Key Responsibilities:**
> - Data Collection using drone and multispectral sensor.
> - Stitching UAV data to acquire mosaics using OpenCV and Python.
> - Calibrating Hi-resolution Multispectral Sensor.
> - Labeling and processing data using Machine learning algorithms.
>
> ❖ **Worked as Research Assistant on a Project "Remote Sensing – Parthenium in Pakistan"** — **May 2019 – September 2020**
>
> **Key Responsibilities:**
> - Collecting aerial data using the multispectral Hawkpi sensor.
> - Developing field maps for high-resolution data collection using a DJI Matrice 100.
> - Creating a pipeline for stitching multispectral data using OpenCV and Python.
> - Processing data using machine learning algorithms.

❖ **National Internship Program, Pakistan** — **June 2017 – July 2018**
  o **Teaching Assistantship**

Computer Vision with Dr. Waqar Shahid

EDUCATION

- National University of Sciences and Technology, College of E&ME, Islamabad, Pakistan
  MS Mechatronics Engineering
  - Area of concentration: Machine Learning, Computer Vision
  - Thesis: Evaluation of High-Resolution Airborne Imagery for Mapping Invasive Weeds in Crops
  - Advisor: Dr. Waqar Shahid Qureshi
  - CGPA: 3.65/4.00

  September 2017 – November 2020

- The Islamia University of Bahawalpur, University College of Engineering and Technology, Bahawalpur, Pakistan
  BSc Computer Systems Engineering
  - Area of concentration: Image Processing and Robotics
  - FYP project: Human Presence-Based Auto Switching of Room Appliances to Save Energy
  - CGPA: 3.46/4.0

  September 2012 – July 2016

SKILLS & EXPERTISE

- **Programming Languages:** Python, C++, JavaScript,
- **Programming Tools:** Visual Studio Code, PyCharm, Anaconda, Git, Adobe Dream viewer
- **Image Stitching Tools:** WebODM, Zephyr Aerial
- **Python Packages:** Pandas, NumPy, Scikit-learn, OpenCV, Keras, Matplotlib, Seaborn, PyTorch, TensorFlow, Tableau, Selenium, BeautifulSoup, OpenAI, Langchain
- **Web Development:** HTML, CSS, JavaScript, PHP, Bootstrap
- **Web servers:** AWS
- **Databases:** MySQL, SQLite, PostgreSQL
- **Framework:** Django, Laravel
- **Drones:** Phantom series, Mavic Series, Matrice 100
- **Remote Sensing Tools:** QGIS and ArcGIS
- **Publication Tools:** LaTeX, Visio, MS Office

Certifications

- **CCNA (Routing and Switching)** from CORVIT Systems, Lahore, Pakistan.
- **Linux (RHCSA)** from CORVIT Systems, Lahore, Pakistan.
- **Web Development using PHP** from Aptech Bahawalpur, Pakistan

Course Projects

- **M.Sc. Course Project**
  - Smart touch pen for smart devices
- **B.Sc. Course Project**
  - RDBMS Web-based tutorial using HTML, CSS, PHP
  - Course work record-keeping system using C++

Languages

- English [Proficient]
- Urdu [Native]

References

- Dr. Waqar Shahid Qureshi, Assistant Professor
  National University of Sciences and Technology (NUST), Islamabad Pakistan
  waqar.shahid@alumni.ait.asia
- Rene Breton, Professor of Astrophysics
  Jodrell Bank Centre for Astrophysics, University of Manchester, Manchester, United Kingdom
  rene.breton@manchester.ac.uk
- Dr. Joseph Fennell, Postdoctoral Research Associate
  Jodrell Bank Centre for Astrophysics, University of Manchester, Manchester, United Kingdom
  joseph.fennell@manchester.ac.uk