

# Zulfiqar Ali

Data Analyst/Researcher

 Portfolio  Github  zulfiqar.ali01@utrgv.edu  0092341-5883613



## EXPERIENCE

### MINISTRY OF INFORMATION & BROADCASTING(MOIB) | DATA ANALYST

March 2023 – Continue | Press Information Department, Islamabad

- Advanced social data mining techniques, disinformation detection using explainable AI(XAI)
- Big Data analysis with time series data
- Multimedia data processing, mainly including image/video analysis and processing
- Using Generative AI to build a predictive system using large-scale scrapped data
- Developed a real-time analytics dashboard using PowerBI and other JavaScript frameworks.

### SEJONG UNIVERSITY | GRADUATE RESEARCH STUDENT DEPARTMENT OF OPTICAL ENGINEERING

September 2022 – February 2023 | Center for Photonic Systems, Sejong University, South Korea

- Developing imaging techniques to study both cardiac and vascular disease.
- Biomedical photonic imaging
- Optical Image Processing and Evaluation
- Artificial Intelligence in micro-endoscopy imaging
- Constructing imaging signatures for various diseases and disorders serving as personalized biomarkers for precision diagnosis & predictive modeling.

### NATIONAL CENTER OF ARTIFICIAL INTELLIGENCE | DEEP LEARNING & COMPUTER VISION ENGINEER

September 2021 – August 2022 | SmartCityLab, Karachi Pakistan

- 3D reconstruction, vision-based robot navigation, pose estimation
- Developed methodologies for the analysis, design, and control of autonomous systems
- Designed of robust planning and decision-making systems, which also entails developing high-dimensional deterministic or probabilistic models
- Developed the theoretical foundations for networked autonomous systems operating in uncertain, rapidly changing, and potentially adversarial environments.

### COMSATS UNIVERSITY ISLAMABAD | GRADUATE RESEARCH ASSISTANT IN STATISTICAL DATA SCIENCE AND MACHINE LEARNING

September 2018 – August 2021 | Islamabad, Pakistan

- Used statistical data mining technique to collect large-scale survey dataset Hierarchical Bayesian modeling,
- Researched and studied children's behavior classification problems using semi-supervised learning techniques.
- Data preprocessing, missing value imputation on large scale data using Expected-Maximization and Bayesian algorithms.

## SKILLS

### PROGRAMMING

#### Proficient:

Python • SPSS • MATLAB

#### Experienced:

• IAT<sub>E</sub>X • R • SagMath • JavaScript • HTML • CSS • SQL

### LIBRARIES/Frameworks

TensorFlow • PyTorch • Scikit-Learn • Pandas • opencv & MediaPipe • Dlib • Matplotlib • Numpy • Tkinter • Seaborn • Django • Fastapi • Flask • NLTK • BeautifulSoup • jQuery • Node.js • Bootstrap

### TOOLS/PLATFORMS

Git • WordPress • Docker • Tableau • Heroku • MongoDB

## EDUCATION

### MASTER OF SCIENCE IN OPTICAL ENGINEERING |

August 2022 - February 2023 | Sejong University, Seoul, South Korea

Coursework in Applied Artificial Intelligence & Machine Learning

### MASTER OF SCIENCE IN COMPUTATIONAL MATHEMATICS |

Sept 2018 - Sept 2020 | Comsats university Islamabad, Islamabad Coursework in Applied & computational mathematics . GPA: 3.38

### BACHELOR OF SCIENCE | UNIVERSITY OF GUJRAT

Sept 2012 - June 2017 |Gujrat

Relevant coursework completed in mathematics, statistics, and scientific programming. GPA: 2.81

### COURSEWORK

Computer Applications • Information Systems • Programming Language for Mathematicians • Data Structures & Algorithms • Computational Linear Algebra • Numerical Computations • Fluid Dynamics • Probability and Statistics

## LANGUAGES

#### Fluent

BALTI | URDU | HINDI | ENGLISH

## PROJECTS

### EmotionRecognition | RESEARCH WORK -CONTINUE

- Working on emotion recognition systems with context.
- Deep feature generation and classification of emotion from the face data.
- Kinematic approach modeling of the human body to identify posture correctly

### AI AutomationBot | PYTHON AND REACT -CONTINUE| 2023

- Developing and Automation Bot to monitor Social media in real-time
- Web Scrapping to extract large scale data for predictive modeling
- Real time Analytics

### BioMedical Imaging | SURVEY ARTICLES -2022

- Deep learning models for microscopic imaging
- Meta-heuristic algorithms in image processing

### AgriDeepNet | REACTJS AND PYTHON - 2022

- Machine learning based web application build using React and Flask.
- AgriDeepNet is used for recommending Crop and Fertilizers based on the soil features with remarkable performance of Deep neural network architecture.
- React JS is used to build the frontend part of the application.
- Flaskapi used as endpoints.

### AIChatBot | PYTHON REACTJS - 2022

- Develop a chat bot web application using ReactJs, Python Flask, and Chatterbot.

### 3DImageSeg | PYTHON - 2020

- Semantic segmentation using deeplab.
- Tkinter-based GUI.

### Portfolio & cv | REACTJS, BOOTSTRAP, NETLIFY,CSS - 2019

- Create a responsive portfolio using the latest web frameworks react,Bootstrap4, Material UI.
- Showing skills description and skill sets with repository links. [\[Link\]](#).
- CV format designed in Latex.

## RESEARCH & PUBLICATIONS

A Survey on Lungs Nodule Segmentation and Classification- In progress

A Survey on Automatic Segmentation of Biomedical retinal image Segmentation - In progress

Children's Behavior classification Problem using Machine learning [Source code](#)

Sentiment analysis Web App Using Python and React [WebLink](#)

2D-Heat diffusion modeling and simulation using MATLAB.

## CERTIFICATION COURSES & WORKSHOPS

- Data Science Workshop on Analysing PUBG Data
- DevOps workshop on Reboot the Web Landscape with DevOps and Cloud
- Deep Learning Specialization
- IBM Machine Learning Professional Certificate
- Fundamentals of Scalable Data Science
- Full Stack Web Development with Angular Specialization
- Introduction to Programming with Python and Java Specialization
- Advanced Data Science with IBM Specialization
- Advanced Machine Learning and Signal Processing.
- Advanced Machine Learning Specialization
- Front-End Web UI Frameworks and Tools: Bootstrap 4
- Introduction to Programming with Python and Java Specialization
- Exploratory Data Analysis for Machine Learning IBM
- Deep Learning and Reinforcement Learning IBM
- Deep Learning in Computer Vision HSE University
- Natural Language Processing with Classification and Vector Spaces DeepLearning.AI
- 4th International Conference on Image Processing and Machine Vision.

## REFERENCES

Tayyab Nawaz, University of Illinois at Urbana-Champaign USA

✉ [tnawaz2@illinois.edu](mailto:tnawaz2@illinois.edu)

Saqlain Raza, Imam Abdulrahman bin Faisal University Kingdom of Saudi Arabia ✉ [srrhussain@iau.edu.sa](mailto:srrhussain@iau.edu.sa)

## EXTRACURRICULAR ACTIVITIES

- Gym fitness freak and badminton player at the inter-university level.
- Directing and advising junior graduate and undergraduate students in Thesis and Final year projects related to Machine learning, Computer vision, and Data mining.
- Rock climbing, reading technology blogs.