

# Zulfiqar Ali

Data Scientist/FARM Stack Developer



Portfolio



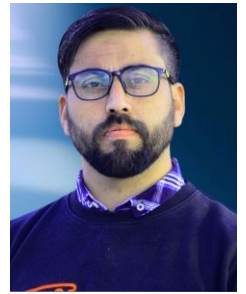
GitHub



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## EXPERIENCE

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

August 2022 – | "Center For Photonic Systems Lab, Sejong University, S.Korea

- Segmentation and detection from Biomedical image using Advance Knowledge-based approach.
- Work on Segmentation and preprocessing of Optical Coherent microscopic image data.
- Working on two Survey articles on OCT Retinal image and lung nodules segmentation.

### NCAI | DEEP LEARNING & COMPUTER VISION ENGINEER

September 2021 – March 2022 | NCAI, Karachi Pakistan

- Self-driving car with driver pose estimation, lane detection using Raspberry pi.
- Finding lane, finding curve, optimizing curve from scratch.
- Vision Transformer models in road safety application
- Fully convolutional networks for road segmentation.
- Deep SORT for object tracking.
- 3D object detection and segmentation.

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

Septmeber 2018 – November 2020 | Islamabad, Pakistan

- Used statistical data mining technique to collect large scale survey dataset Hierarchical Bayesian modeling, Multivariate pattern analysis, Sentiment analysis and Behavioral computational modeling (model-free reinforcement learning).
- Researched and studied children's behavior classification problem using semi-supervised learning techniques.
- Data preprocessing, missing value imputation on large scale data using Expected-Maximization and Bayesian algorithms.

## PROJECTS

### 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 responsive portfolio using latest webframeworks react, bootstrap4.
- Showing skills description and skill sets with repository links. [\[Link\]](#).
- CV format designed in Latex.

## SKILLS

### PROGRAMMING

#### Proficient:

Python • SPSS • MATLAB

#### Experienced:

• L<sup>A</sup>T<sub>E</sub>X • SagMath • JavaScript • HTML • CSS

### LIBRARIES/Frameworks

TensorFlow • 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 - Continue | Sejong University, Seoul

Coursework in Machine Learning & Mathematics of AI & Research Methodology and Technical Writing.

### MASTER OF SCIENCE IN COMPUTATIONAL MATHEMATICS | COMSATS UNIVERSITY ISLAMABAD

Sept 2018 - Sept 2020 | 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

## 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.

## LANGUAGES

Fluent

BALTI | URDU | HINDI | ENGLISH

## 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)

Mansoor Shaukat Khan, COMSATS University Islamabad,Pakistan ✉ [mansoorkhan@comsats.edu.pk](mailto:mansoorkhan@comsats.edu.pk)

## EXTRACURRICULAR ACTIVITIES

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