Shakra Batool

CONTACT INFORMATION	MCB 8/45 Mohallah Anwar abad, Chakwal, shakra.batool123@gmail.com Pakistan
RESEARCH INTERESTS	Image Classification, Image Segmentation, Machine Learning, Deep Learning, Data Mining, Feature Extraction

EDUCATION

COMSATS University, Islamabad, Pakistan.

BS. Bioinformatics   Feb. 2017 - Jan. 2021

- **CGPA:** `3.46 out of 4.0`
- **Thesis**: Tumor Detection and Segmentation using Convolutional Neural Networks.

Kallar Kahar Science College, Chakwal, Pakistan.

FSc. Pre-medical   June. 2013 - May. 2016

Relevant Courses:
Artificial Intelligence and Neural Networks, Bioinformatics Analysis, Deep Learning, Deep Learning in Medicine

RESEARCH PROJECTS

- **Tumor Detection using Mobilenet**
  Approach: I evaluated several CNN models including **VGG16**, **ResNet50**, and **MobileNet** to detect tumors from mammograms and histopethalogical images. For training and testing **CBIS-DDSM** dataset is used which is an updated and standardized version of the Digital Database for Screening Mammography (DDSM).
  Outcome: Trained MobileNet models which are able to accurately classify the tumor into benign and malignant classes
- **Tumor Segmentation using UNet**
  Approach: I used the UNet model for training on a publically available dataset namely Data Science Bowl 2018. Training dataset contains images along with the mask of nuclei present in images.
  Outcome: A trained UNet model is able to segment the nuclei present in images.

COURSE PROJECTS
- Auto diabetes detection using logistic regression on the microbiome of human body
- Identification and Extraction of specific human proteins using dictionaries and suffix trees
- Restaurant Management System with online reservation system using Object Oriented Programming
- Wampus World game in which an intelligent agent has to move with different arrows and to get the GOLD for winning the game.
- **MUSINTO:** A game for kids to teach rhymes, alphabets, and numbers

LANGUAGES AND TOOLS

- **Languages:** Java, C++, Python, SQL, R, Matlab. I am also familiar with HTML, Visual Studio, C#, and FORTRAN.

- **Tools:** Eclipse, Idle, Google Colab, Netbeans, Visual Studio, MS SQL Server, XAMP.

Other Skills

- Drug Designing by receptor-ligand binding using Bioinformatics Softwares including **Hex Software**, **Ligplot Plus**, **PDB Editor**, **Chimera**, and **Wincoot**.
- Study of DNA of different species using **NCBI**, **EBI**, and **SwissProt** .
- DNA to Proteins Conversions using Bioinformatics Tool **ExPasy**.
- Identifying Novel proteins and compare their sequences with other protein's sequences using **BLAST**, **FASTA**, **Rasmol**, **ClustalW**, and **Emboss**.
- **Microsoft Word**, **Microsoft Exel**, **Microsoft Powerponint**, and **Microsoft Access**.

Volunteer Work

- Fund raising and distribution to local deserving people affected by COVID-19
- Awareness talk on Muscular Dystrophy and Thalasymia
- Hospital visit to understand the cause and effects of Muscular Dystrophy and Thalasymia in young children.