# Shakra Batool

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| **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**: Breast Cancer 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

**EXPERIENCE**

**NCAI-MID Lab**, COMSATS, Islamabad, Pakistan.        Sep. 2020 - Present

I am currently working with Ahmad Raza Shahid on **Deep Learning**, and **Medical Image Processing**.

**RESEARCH PROJECTS**

- **Cancer 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
- **Cancer 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. During training, technique of augmentation is used to reduce overfitting.
  **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.