Bone Fracture Classification using CNN

Objective:

- To Understand Preprocessing steps for Images' dataset and Classification task
- To Understand Use and Implementation of Convolutional Neural Network (CNN)
- To learn to label classes for each image in dataset
- To Implement Convolutional Neural Network

Dataset:

The Dataset is available publicly on kaggle and can be accessed using this link.

Assignment 1. Data Preprocessing

- To load images from dataset
- Convert images in to arrays for processing
- Resize the images
- Label each image in dataset to its respective class
- Split the data into train test and validation using *train test split* from *Sk-learn library.*

Assignment 2. Implement and Train Convent network

- Design the model and summarize it
- Train the model on training data and evaluate it on validation data
- Make predictions using Trained model
- Evaluate the model on test data

Assignment 3. Results

- Plot different graphs for specified epochs like training accuracy vs training loss, validation accuracy vs validation loss, training accuracy vs validation accuracy.
- Plot confusion matrix to understand the results better.
- Print classification report specifying precision and recall.
- Prepare a Detailed report for future reference