MIT ADT University
MIT School of Engineering
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Mini Project-I S.E (CSE 2) Year: 2022-23 SEM III

MINI PROJECT-1 (SYNOPSIS)

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Project Title:-Image classification using CNN
Sponsorship: NA
External Guide: NA

Internal Guide:- Prof. Pratik Kambale

SYNOPSIS:-

Problem Statement:-Classification of Chest-X-Ray Covid-19 Images using Convolutional Neural Network (CNN).

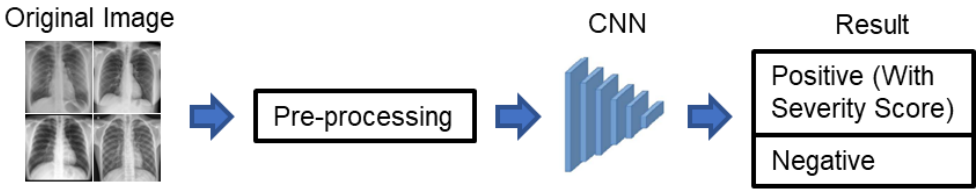
Introduction:-

Chest X-ray is an imaging technique that plays an important role in Covid Cases detection.The goal of this project is to classify Chest X-ray images as normal(healthy) or Covid cases using Convolutional neural networks.Convolutional Neural network is a type of Deep learning algorithm that performs very well in image classification tasks.

Proposed System:-

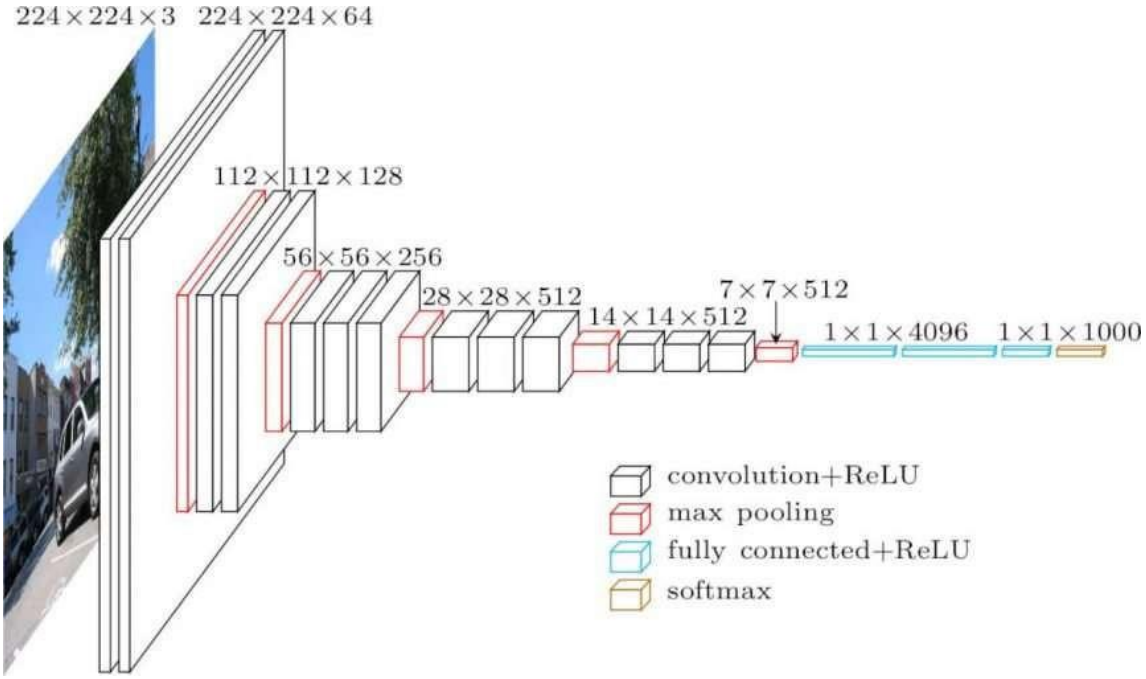
Algorithm:-
1)Collect Chest Xray Images/Dataset.
2)Normalizing the images/data.
3)Data Augmentation
4)Resizing of images
5) Classifying the images,which will tell us whether the patient is normal(healthy) or has Covid-19.
6) Accuracy Check after classifying the images.

Flow Diagram:-

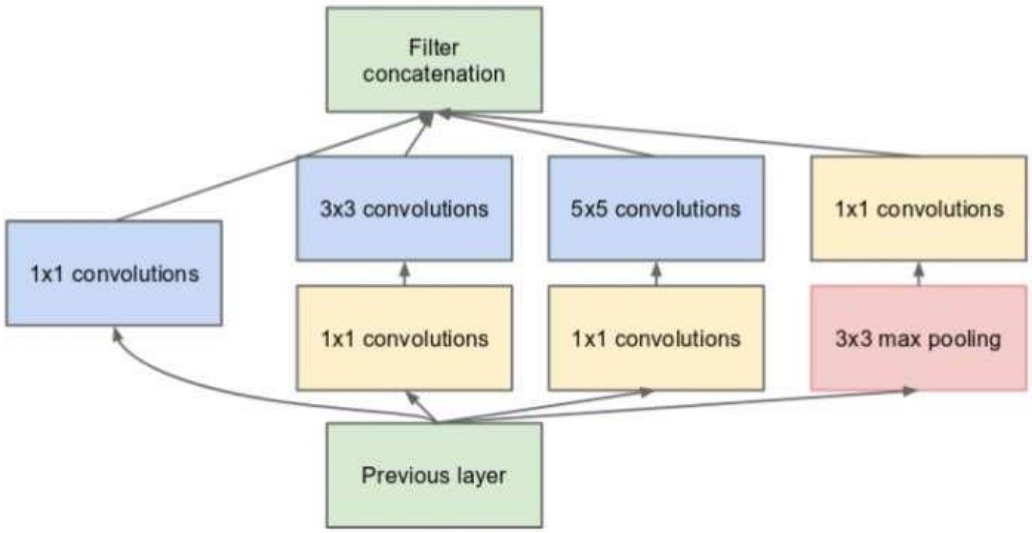


Training Models which we need for implementation of code:-

1)VCG-16



2)Inception:-



(b) Inception module with dimension reductions

H/W and S/W Resources:-

S/W Resources:-

1)Python

2)Numpy and Pandas

3)Matplotlib and Seaborn

4)Tensorflow and Keras

Conclusion:-

Owing to the high availability of medically-oriented image datasets, great success can be achieved using convolutional neural networks (CNNs) in the recognition and classification of these images. Since previous research has shown CNNs to perform as well as the best clinicians in diagnostic tasks, they caused great excitement among researchers.

References:-

1) https://courses.analyticsvidhya.com/courses/take/convolutional-neural-networks-cnn-from-scratch/texts/10846540-more-projects-with-cnn

2) https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0265949

3) https://www.analyticsvidhya.com/blog/2020/08/top-4-pre-trained-models-for-image-classification-with-python-code/

4) https://drive.google.com/file/d/1s2C9DbUfOnadne9rEW60eHSRbTjYV9ab/view?usp=sharing