NATURAL DISASTER INTENSITY ANALYSIS AND CLASSIFICATION USING AI

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INTRODUCTION

Natural disasters fall into the category where certainity of results in prediction is in lack.Over the years many researchers have applied various deep learning techniques to detect and classify natural disasters to overcome losses in ecosystems,but detection of natural disasters still faces issues due to the complex and imbalance structure of images.

To tackle this problem,we developed a multilayered deep convolutional neural network model that classifies the natural disaster and tells the intensity of the natural disaster.

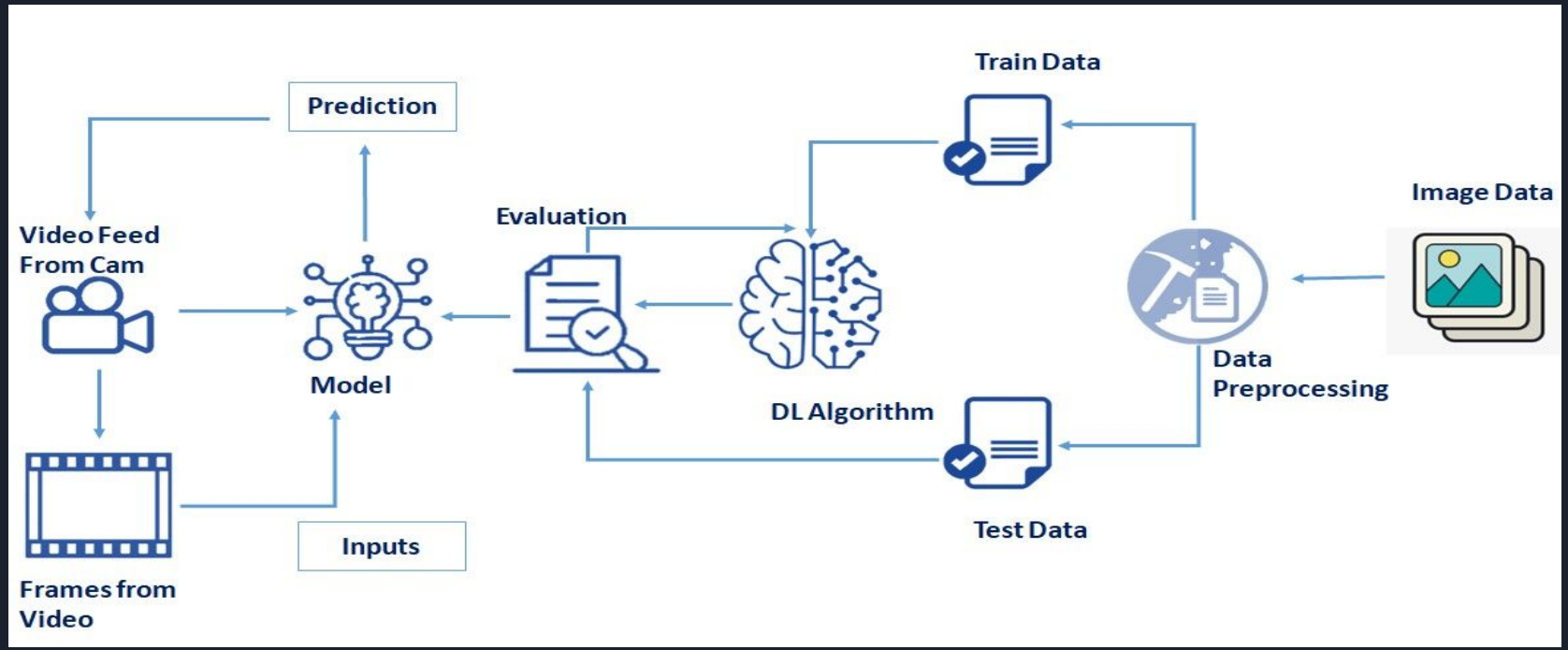
AGENDA

Since olden times many researchers have tried predicting the natural disasters by different deep learning methodologies.

The agenda of this model is to predict the classification or the type of natural disaster and to predict the intensity of it.

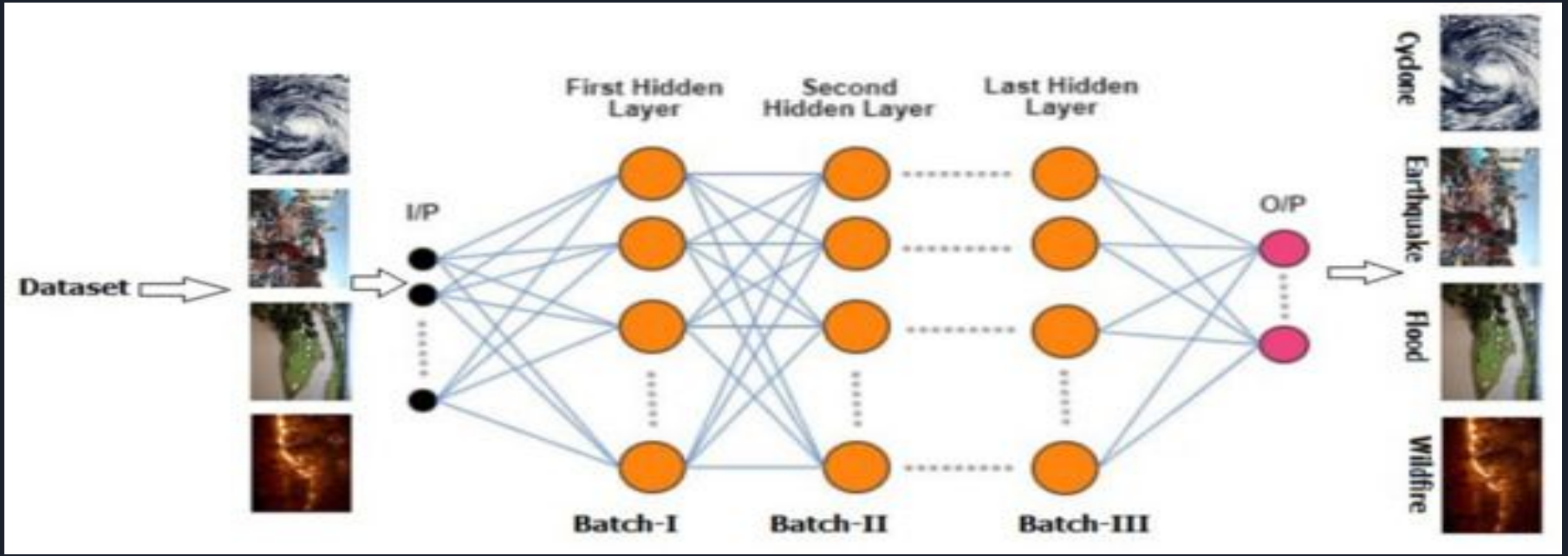
PROJECT OVERVIEW

The model does natural disaster prediction by using a classification type of data in vast amounts and uses convolutional neural networks(CNN),open cv and a library called sequential to initialize an image dataset.



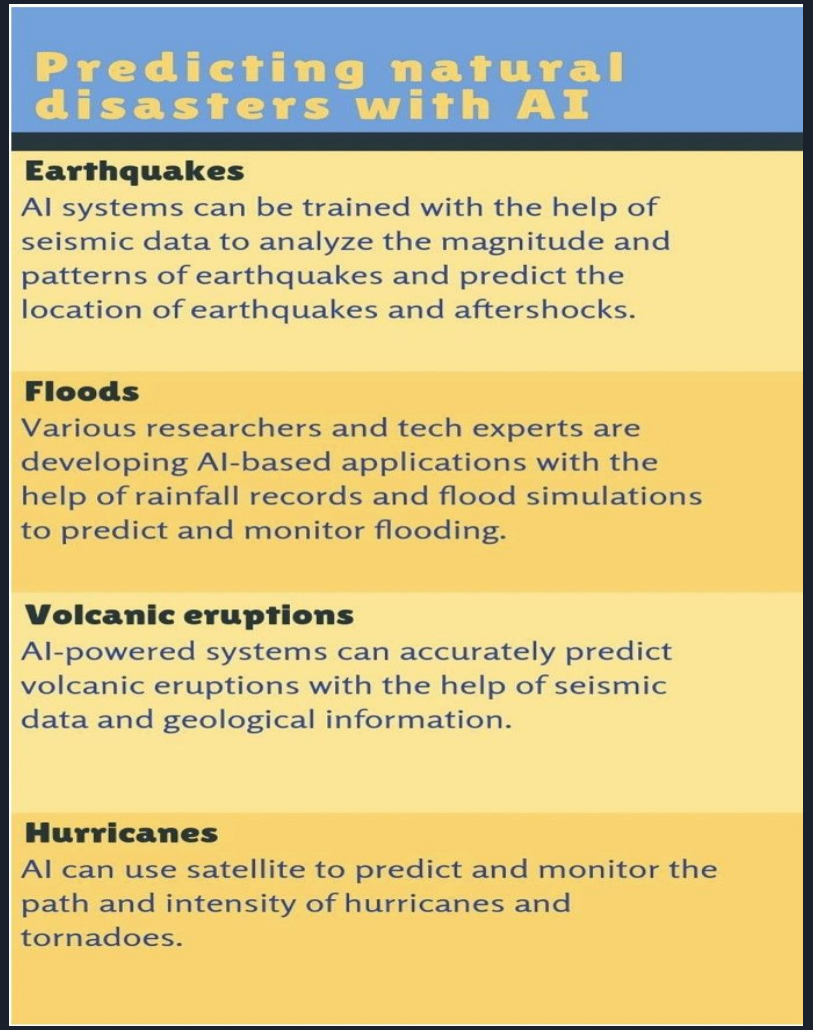
STRUCTURE OF THE NEURAL NETWORK USED BY THE MODEL

The neural network used by the model is Convolutional neural network (CNN) which helps in the recognition of classes given in the dataset.



SCOPE OF THIS MODEL

- The scope this model is to reduce the risk of harm caused by the natural disasters by Predicting the type and the intensity of the disaster .
- The predicted results of the model help in reduced level of loss to mankind.



METHODS TO INCREASE ACCURACY

- Increased amount of data can help the model to classify the data more efficiently.
- Increase in data further helps in data classification and prediction.
- Scaling the images can delete the unwanted data or area from the image and only focuses on main data.
- The use of Data Augmentation makes the model work more efficiently as it helps to increase the amount of training data.

RESULTS

- The model when given an image will detect it as an Earthquake.
- Similarly gives the output in case of video file(mp4).

LINKS

An Article which helped us understand more-https://egc.yale.edu/about/perspectives/bihar-early-warning-system

CONCLUSION

The conclusion of this model is that the high risk of loss of lives and damages is reduced by this model of prediction of intensity of natural disaster.

Which helps us by predicting the area which is going to be effected and with what intensity and all. Thus escaping the severity of the disaster partially.