

**IBM-Project:** PNT2022TMID06270

**Project Title:** Natural Disasters Intensity Analysis and Classification using Artificial Intelligence

**Faculty Mentor(s) Name:** Mrs. Thenmozhi.K

**Team Members:**

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**Domain:** Artificial Intelligence

**Project Description:**

Natural disasters not only disturb the human ecological system but also destroy the properties and critical infrastructures of human societies and even lead to permanent change in the ecosystem. Disaster can be caused by naturally occurring events such as earthquakes, cyclones, floods, and wildfires. Many deep learning techniques have been applied by various researchers to detect and classify natural disasters to overcome losses in ecosystems, but detection of natural disasters still faces issues due to the complex and imbalanced structures 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 disaster of natural. The model uses an integrated webcam to capture the video frame and the video frame is compared with the Pre-trained model and the type of disaster is identified and showcased on the OpenCV window.

**Project Objectives :**

- Know fundamental concepts and techniques of the Artificial Neural Network and Convolution Neural Networks
- Gain a broad understanding of image data.
- Work with Sequential type of modeling
- Work with Keras capabilities oWork with image processing techniques
- Work with OpenCV

## Project Flow:

- The user interacts with the UI (User Interface) to open the integrated webcam.
- The video frames are captured and analyzed by the model which is integrated with flask application.
- Once model analyses the video frames, the prediction is showcased on the UI and OpenCV window

## Architecture Diagram:-

