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COLLEGE NAME:VIGNAN'S LARA INSTITUTE OF TECHNOLOGY AND SCIENCE

COURSE NAME:ARTIFICIAL INTELLIGENCE

PROJECT:NATURAL DISASTERS INTENSITY ANALYSIS AND CLASSIFICATION USING AI

A dramatic photograph of a volcanic eruption. A massive, dark, and billowing plume of ash and smoke rises high into the sky from a mountain. The foreground shows a dark, silty river or flow of ash descending the slope. The sky is filled with heavy, grey clouds. In the lower foreground, there are silhouettes of trees and utility poles with power lines.

Natural Disasters Intensity Analysis and Classification using Artificial Intelligence

Synopsis

01

-
- Introduction
 - Objectives

02

- Proposed Methodology
- Advantages and Disadvantages

03

- Future scope
- Conclusion



Part 1:

Introduction



- Natural catastrophes not only disrupt the ecology that supports human life, but they also obliterate vital facilities and properties in human society
- To mitigate ecological losses from natural disasters, several deep learning approaches have been used by numerous researchers
- **We created a multilayered deep convolutional neural network model that identifies natural disasters and indicates their intensity in order to address this issue.**

Objectives

The objectives of disaster management are:



Supply of essential commodities and rehabilitation of disaster victims




Protective measures to reduce the intensity of future disasters.



Rescue of victims by the event and disposal of losses suffered.

To prevent ecological losses from natural disasters, as we all know that “Prevention is better than cure”.

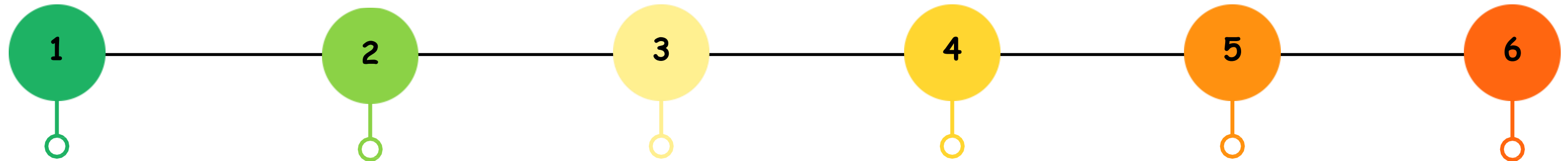
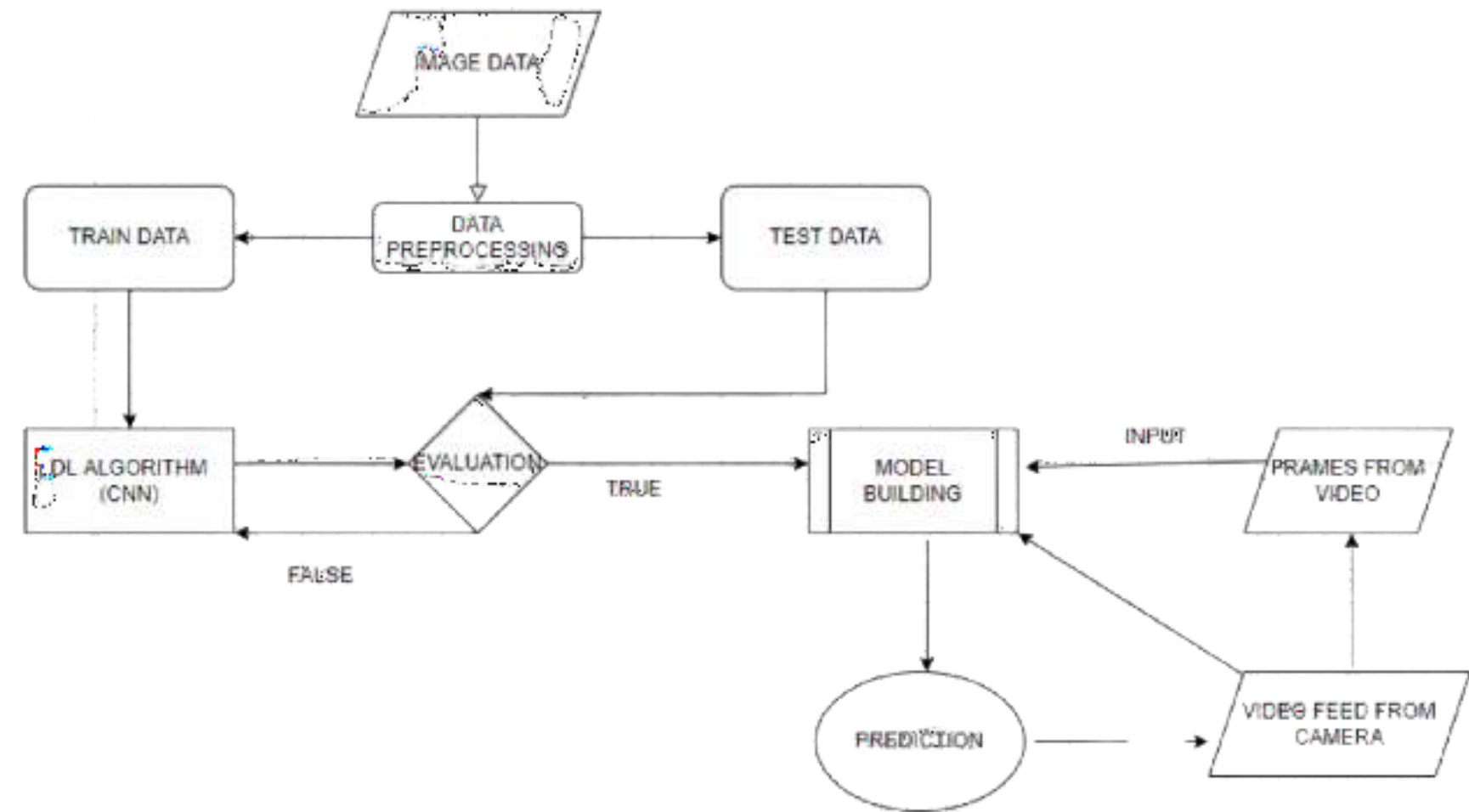




Part 2:

Proposed Methodology

Data flow diagram



Collection
of Dataset



Data pre-
processing



Applying
algorithm



Train the
algorithm



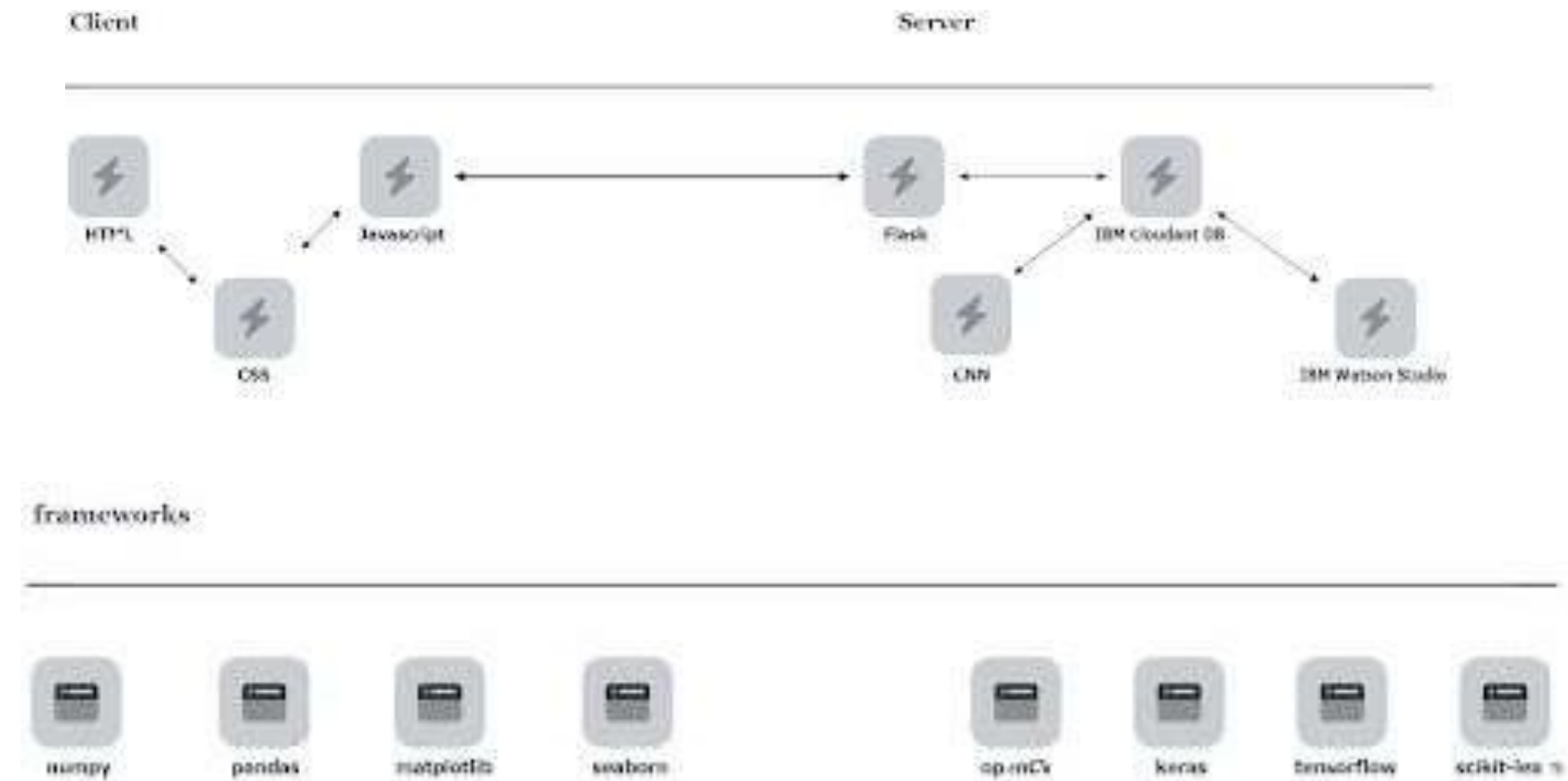
Test the
model



Deployment

Solution & Technical architecture

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To classify the natural disaster and calculate the intensity of the disaster.
2.	Idea / Solution description	To develop a multilayered deep convolutional neural network model that classifies the natural disaster and tells the intensity of disaster.
3.	Novelty / Uniqueness	We are implementing neural networks to train our model instead using machine learning algorithms which expected to provide with better accuracy.
4.	Social Impact / Customer Satisfaction	With better accuracy in predicting intensities precautions are taken respectively.
5.	Business Model (Revenue Model)	The software is cheap, and the minimum requirements are affordable.
6.	Scalability of the Solution	Better accuracy in measuring the intensities of the natural disaster and in classifying it.





Advantages

AI can operate continuously without rest

With AI-based methods, we can predict the weather for the present day and the coming days

Their alert temperament allows them to react quickly and effectively



Disdvantages

Getting outfitted costs a lot of money

Robots are one use of artificial intelligence that is replacing jobs and raising unemployment

Machines can only do jobs for which they are created for; if they are asked to complete anything else, they frequently fail or produce useless results,

A dramatic, high-contrast image of a massive, dark, swirling wave crashing over an offshore oil platform in a stormy sea. The wave is the central focus, with a large, white, foamy crest. The oil platform is a small, multi-level structure with orange legs, situated in the lower right. The sky is dark and stormy, with a bright light source creating a lens flare effect. The overall mood is one of immense power and danger.

Part 3:

Future scope



Google's pilot effort in Patna, India, to use artificial intelligence to monitor floods, was a success last year.

To forecast the flow of water, they performed hundreds of thousands of simulations using its machine learning (ML) models.

By using AI, disaster management organizations can deploy robots, sensors, and drones in the future to offer precise information on damaged structures and landscapes, impending floods, and safer rescue missions.

A firefighter in full protective gear, including a helmet and a large air tank on their back, stands in a forest at night. The scene is dramatically lit by a bright fire burning in the background, which casts a strong orange glow over the entire scene. The firefighter is holding a tool, possibly a pike pole, and is looking towards the fire. The trees in the forest are silhouetted against the bright light of the fire.

Part 4:

Conclusion



- 01 Numerous researchers have tried to detect natural disasters using various deep learning techniques
- 02 Deep learning algorithms for natural disaster detection still have a number of concerns with noise and severe class imbalances
- 03 We suggested a multilayered deep convolutional neural network for natural disaster identification and intensity classification to overcome these issues

Progress



- Project Objectives
- Project Flow
- Project Structure
- Assignments
- Prerequisites
- Prior Knowledge
- Collection of Data set
- Image Preprocessing
- Collection of Data set
- Image Preprocessing
- Model Building
- Application Building
- Train the Model on IBM Ideation Phase
- Project Design and Planning
- Project Development Phase



Thank You