NATURAL DISASTER INTENSITY ANALYSIS AND CLASSIFICATION USING ARTIFICIAL INTELLIGENCE

Project report

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INTRODUCTION

Project Overview

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. 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- Pre- trained model and the type of disaster is identified and showcased on the OpenCV window

Purpose

The purpose of this project to detect the natural disaster and reduce, or avoid, the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery

LITERATURE SURVEY

TITLE : A Deep Learning Approach of Recognizing Natural Disasters on Images.

PROPOSED WORK

First, this work introduces to the research community a new dataset for the joint classification of natural disaster types and intensity. Moreover, this study primarily aims to explore natural disasters recognition using a convolutional neural network and transfer learning. An open source tool is used for finding and removing the repeated images for analysis. Wildfire, Earthquake, Flood and Volcanic eruption are taken. In particular, this study attempts to build and train a lightweight convolutional neural network that can jointly recognize natural disaster types and intensity. Based on the intensity, it classifies as Severe, Moderate, Insignificant Lastly, this study attempts to measure the model performance using four performance measures; accuracy, precision,recall and F1-core.

TITLE

   Disaster Intensity-Based Selection of Training Samples for Remote Sensing Building Damage Classification.

PROPOSED WORK

     In this proposed work, two fully automatic procedures for the detection of severely damaged buildings are introduced. The fundamental assumption is that samples that are located in areas with low disaster intensity mainly represent non-damaged buildings. Furthermore, areas with moderate to strong disaster intensities likely contain damaged and nondamaged buildings. Under this assumption, a procedure that is based on the automatic selection of training samples for learning and calibrating the standard support vector machine classifier is utilized. The second procedure is based on the use of two regularization parameters to define the support vectors. These frameworks avoid the collection of labeled building samples via field surveys and/or visual inspection of optical images, which requires a significant amount of time. The performance of the proposed method is evaluated via application to three real cases. The resulted accuracy ranges between 0.85 and 0.89, and thus, it shows that the result can be used for the rapid allocation of affected buildings.

TOOLS USED/ALGORITHM

 ➤ Automatic labelling ➤ Building damage ➤ Multi regularization parameters ➤ Demand Parameter ➤ Support Vector Machine (SVM)

TECHNOLOGY :

 Machine Learning

TITLE

Hurricane Damage Detection using Machine Learning and Deep Learning

PROPOSED WORK
In this proposed work, Disaster detection can be done through social media
and satellites. Images obtained from satellites are widely used since capturing and
processing of these images can be done in a shorter span of time. Satellite images help
to recognize damage pattern caused by the disasters. The images from social media
are also useful since they provide information on an immediate basis. Since manual
methods are errorprone, deep learning and machine learning are used which used for
detecting the damage caused by disasters effectively.

TOOLS USED/ALGORITHM

➤ Social-media ➤ Satellite imagery ➤ Deep learning techniques ➤ CNN,VGG-16, ResNet ➤
Machine learning tecniques ➤ Support Vector Machine, Decision trees, random forest.

References 1. Mignan, A.; Broccardo, M. Neural network applications in earthquake prediction (1994–
2019): Meta-analytic and statistical insights on their limitations. Seism. Res. Lett. 2020, 91, 2330–
2342. [CrossRef]

 2. Tonini, M.; D'Andrea, M.; Biondi, G.; Degli Esposti, S.; Trucchia, A.; Fiorucci, P. A Machine Learning-
Based Approach for Wildfire Susceptibility Mapping. The Case Study
of the Liguria Region in Italy. Geosciences 2020, 10, 105. [CrossRef]

 3. Islam, A.R.M.T.; Talukdar, S.; Mahato, S.; Kundu, S.; Eibek, K.U.; Pham, Q.B.; Kuriqi, A.;
Linh, N.T.T. Flood susceptibility modelling using advanced ensemble machine learning
models. Geosci. Front. 2021, 12, 101075. [CrossRef]

Problem Statement Definition
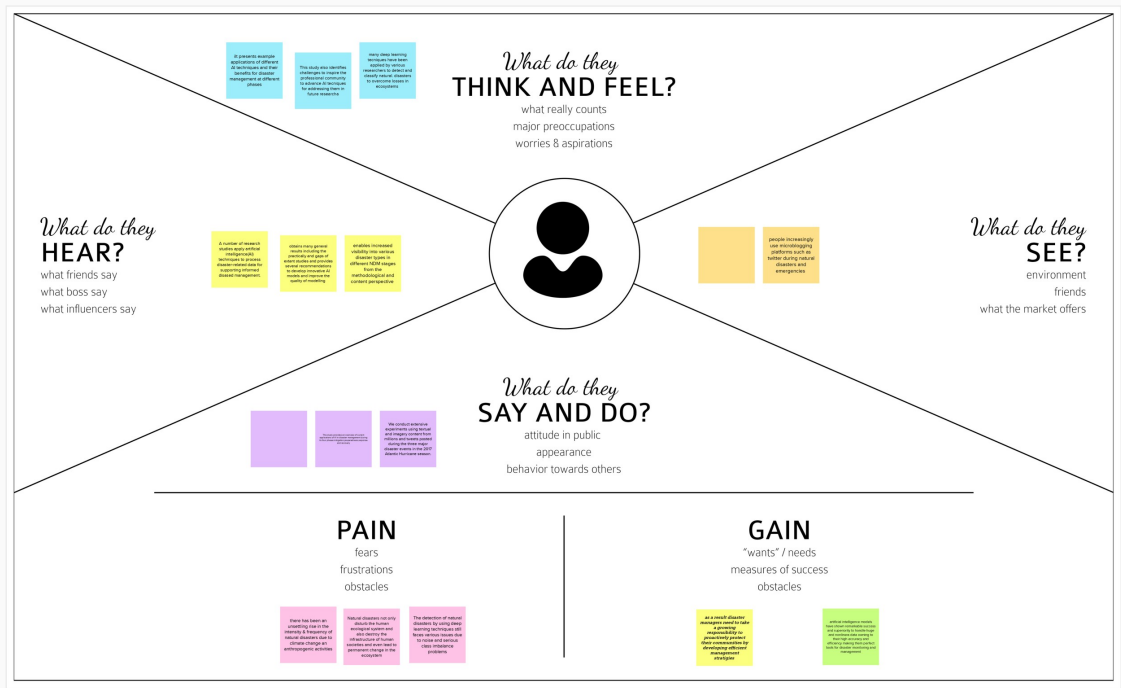People needs a way to classify and analyse the natural disaster so that they
can prevent themselves from losses due to the disaster and millions of lives.
People and animals are facing so many issues like loss of life, property,
resources and deterioration of the air quality due to the natural disaster. So we need to
analyse and detect natural disaster andd protect them from such disaster.

Conducting a brainstorm

Executing a brainstorm isn't unique; holding a productive brainstorm is. Great brainstorms are ones that set the stage for fresh and generative thinking through simple guidelines and an open and collaborative environment. Use this when you're just kicking-off a new project and want to hit the ground running with big ideas that will move your team forward.

- ⏱ **15 minutes** to prepare
- ⏱ **30-60 minutes** to collaborate
- 👥 **1-8 people** recommended

Created in partnership with:

∞ Meta

☐ Show template feedback

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⏱ 15 minutes

1. **Choose your best "How Might We" Questions**
Create 5 HMW statements before the activity to prepare them to the team.

2. **Set the stage for creativity and inclusivity**
Go over the brainstorming rules and keep them in front of your team while brainstorming to encourage collaboration, optimism, and creativity.
   1. **Encourage wild ideas** (If none of the ideas sound a bit ridiculous, then you are filtering yourself too much.)
   2. **Defer judgement** (This can be as direct as harsh language, or as subtle as a condescending tone or talking over one another.)
   3. **Build on the ideas of others** ("I want to build on that idea" or the use of "yes, and…")
   4. **Stay focused on the topic at hand**
   5. **Have one conversation at a time**
   6. **Be visual** (Draw and/or upload to show ideas, whenever possible.)
   7. **Go for quantity**

3. **Interested in learning more?**
Check out the Meta Think Kit website for additional tools and resources to help your team collaborate, innovate and move ideas forward with confidence.

Open the website →

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① Choose your best "How Might We" Questions

Share the top 5 brainstorm questions that you created and let the group determine where to begin by selecting one question to move forward with based on what seems to be the most promising for idea generation in the areas you are trying to impact.

⏱ 10 minutes

> How might we... [insert problem statement here?]

> How might we... [insert problem statement here?]

> How might we... [insert problem statement here?]

> How might we... [insert problem statement here?]

> How might we... [insert problem statement here?]

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② Brainstorm solo

Have each participant begin in the "solo brainstorm space" by silently brainstorming ideas and placing them into the template. This "silent storming" avoids group-think and creates an inclusive environment for introverts and extroverts alike. Set a time limit. Encourage people to go for quantity.

⏱ 10 minutes

Person 1   Person 2   Person 3   Person 4

Person 5

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③ Brainstorm as a group

Have everyone move their ideas into the "group sharing space" within the template and have the team silently read through them. As a team, sort and group them by thematic topics or similarities. Discuss and answer any questions that arise. Encourage "Yes, and…" and build on the ideas of other people along the way.

⏱ 15 minutes

💡 **TIP**
You can use the **voting session** tool above to focus on the developed ideas.

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④ Decide your focus

Give each person two icons to vote which idea should move forward.

⏱ 5 minutes

Technical Aspects

Social Impacts

People emotions

Availability of resource

After you collaborate

A brainstorm like this typically results in a handful of promising ideas that you can carry forward and act upon.

Quick add-ons

☐ **Cluster related ideas**
Look for patterns or similarities in the standout ideas. Could any be correlated together to form a stronger concept? Cluster similar ideas and label each cluster with a theme.

☐ **Vote on the most promising ideas**
Narrow your focus to only the strongest few ideas by holding a Voting Session. Give each person 2 votes.

Keep moving forward

⊞ **2x2 Prioritization matrix**
Build shared understanding and make collective decisions for moving ideas forward.
Open the template →

⊞ **Storyboarding**
Share existing and/or future consumer experiences through the act of sketching.
Open the template →

⊞ **Pre-mortem**
Harness the collective experience and wisdom of the team, before the project even starts.
Open the template →

☐ Share template feedback

Need some inspiration?
See a finished version of this template to kick-start your work.
Open example →

1

Build empathy and keep your focus on the user by putting yourself in their shoes.

What do they THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations

AI presents example applications of different AI techniques and their benefits for disaster management at different phases

This study also identifies challenges to inspire the professional community to advance AI techniques for addressing them in future researche

many deep learning techniques have been applied by various researchers to detect and classify natural disasters to overcome losses in ecosystem

What do they HEAR?
what friends say
what boss say
what influencers say

A number of research studies apply artificial intelligence(AI) techniques to process disaster-related data for supporting informed disaster management.

obtains many general results including the performance and gaps of extent studies and provides several recommendations to improve innovative AI models and improve the quality of modelling

enables increased visibility into various disaster types in different NDM stages from the methodological and content perspective

What do they SEE?
environment
friends
what the market offers

people increasingly use microblogging platforms such as twitter during natural disasters and emergencies

What do they SAY AND DO?
attitude in public
appearance
behavior towards others

We conduct extensive experiments using textual and imagery content from millions and tweets posted during the three major disaster events in the 2017 Atlantic Hurricane season.

PAIN
fears
frustrations
obstacles

there has been an unsettling rise in the intensity & frequency of natural disasters due to climate change an anthropogenic activities

Natural disasters not only disturb the human ecological system and also destroy the infrastructure of human societies and even lead to permanent change in the ecosystem

The detection of natural disasters by using deep learning techniques still faces serious issues due to noise and serious class imbalance problems

GAIN
"wants" / needs
measures of success
obstacles

as a result disaster managers need to take a growing responsibility to proactively protect their communities by developing efficient management strategies

artificial intelligence models have shown remarkable success and capacity to learn large amounts of data and combines data owing to their high accuracy and efficiency, making them perfect tools for disaster monitoring and management

Ideation Phase
Define the Problem Statements

Date	19 September 2022
Team ID	PNT2022TMID47877
Project Name	Project - Natural Disasters Intensity Analysis and Classification using Artificial Intelligence
Maximum Marks	2 Marks

Customer Problem Statement Template:

Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

I am	Describe customer with 3-4 key characteristics - *who are they?*	Describe the customer and their attributes here
I'm trying to	List their outcome or "job" the care about - *what are they trying to achieve?*	List the thing they are trying to achieve here
but	Describe what problems or barriers stand in the way – *what bothers them most?*	Describe the problems or barriers that get in the way here
because	Enter the "root cause" of why the problem or barrier exists – *what needs to be solved?*	Describe the reason the problems or barriers exist
which makes me feel	Describe the emotions from the customer's point of view – *how does it impact them emotionally?*	Describe the emotions the result from experiencing the problems or barriers

Reference: https://miro.com/templates/customer-problem-statement/

Example:

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	Common man	Understand the daily weather changes in a areas	I don't know have a correct guidance	I don't have much idea	stressed
PS-2	Student	Get a full weather report in a particular area	I don't aware of some websites	I can't get such details	Frustrated

Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMIDxxxxxx
Project Name	Project - xxx
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S. No	PARAMETER	DESCRIPTION
1.	Problem Statement (Problem to be solved)	*Disasters caused by extreme weather hazard Example: -cold wave, heat wave -lighting -drought *Disasters caused by geological hazard Example: -Earth quakes and landslide -Volcanic eruptions -Avalanches -Sinkholes *Disasters caused by water hazards Example: -Floods -Tsunami -Limnic eruptions
2.	Idea / Solution description	* Disaster forecasting system, web-based visualization system, alert system, and disaster response scenario database and achieved highly accurate results for early wildfire detection. * Deep learning method is used to analysis the natural disasters intensity. * IoT based method is used for alive human detection and alert system. * AI methods can predict earth quakes,landslide,floods.
3.	Novelty / Uniqueness	* This application can sugget good prediction for the natural disasters by recognizing the detection *
4.	Social Impact / Customer Satisfaction	*Its helps the disaster management system by identifying the detection in the early stage and reducing the losses in the environment and save human life
5.	Business Model (Revenue Model)	*This application recommends to the

		prediction of disaster management subscription basis.
6.	Scalability of the Solution	*This application can be improved by introducing online purchases of iot devices, alert system easily

1. CUSTOMER SEGMENT(S) — CS

Seismologist
Metrologist
Climatologist

6. CUSTOMER CONSTRAINTS — CC

Scope of the product
Prolonged periods of implementation
Lack of sufficient resources
Unpredictable climate changes

5. AVAILABLE SOLUTIONS — AS

Uses the classification of algorithm solely to the purpose of identification for impacts of impacts of disasters by the help of optimized data clustering

Merits;
Modal transperancy

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Which results in such devastating phenomenon ,it is difficult to analyse factors such as atmospheric pressure,tectonic movements,ocean surface disturbances and volcanic activity.

9. PROBLEM ROOT CAUSE — RC

Influence of stellar objects
Soil erosion
Ocean currents
Seismic waves
Air pressure
Tectonic movement
.

7. BEHAVIOUR — BE

1)Coordinating incident responces planning
2)Requires construction of disaster resistant structures
3)Develops,adopts ,and enforces building codes and land uses standards

Focus on J&P, tap into BE, understand RC

Focus on J&P, tap into BE, understand RC

3. TRIGGERS — TR

, If it factors encourages the users to obtain it at all costs
When a product offers high precision for such unpredictable factors,

10. YOUR SOLUTION — SL

We hope to integrate the supervised classification algorithm with reinforcement learning algorithm to help the AI monitor.
And predict the influence of various factors in the environment and their impacts

8. CHANNELS of BEHAVIOUR — CH

ONLINE
1)They seek technical support or the experts opinion on such matters via nternet.
2)They organize strategical meetings with other authorizations to help in decision making

4. EMOTIONS: BEFORE / AFTER   `EM`

BEFORE:
   Lots of disaster can be give the people by lots of damages

AFTER:
To make the healthy society to raises their overall work efficiency but also their confidence.

OFFLINE
   1) It prevents the impact of the natural phenomenon
   2) They involve in series of planning activities to ensure the smooth progress of the monitoring

Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID47877
Project Name	Project - Natural Disasters Intensity Analysis And Classification Using Artificial Intelligence
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.

- Describe the structure, characteristics, behaviour, and other aspects of the software to project stakeholders.

- Define features, development phases, and solution requirements.

- Provide specifications according to which the solution is defined, managed and delivered.

- Design an architecture that achieves the recovery time and recovery point objective business needs.

Example - Solution Architecture Diagram:

Reference: https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-o n-aws-part-1-architecture-and-design-considerations/
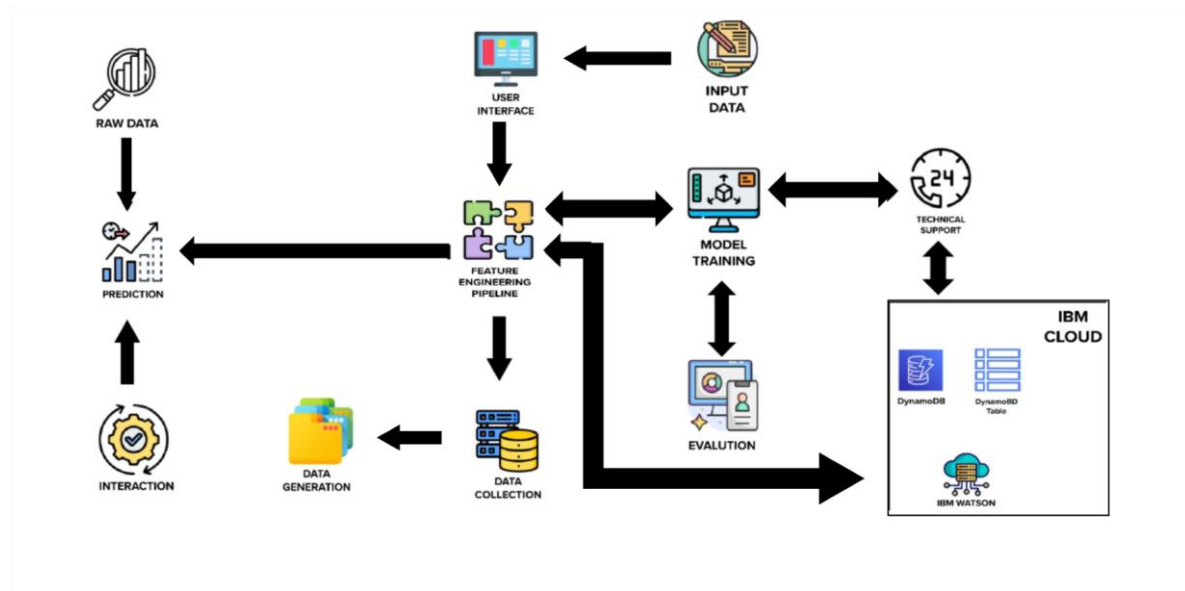
NATURAL DISASTERS INTENSITY AND ANALYSIS AND CLASSIFICATION USING ARTIFICIAL INTELLIGENCE

1.ABSTRACT:

There habeen an unsettling rise in the intensity and frequency of natural disasters due to climate change and anthropogenic activities. Artificial Intelligence (AI)models have shown remarkable success and superiority to handle huge and nonlinear data owing to their higher accuracy and efficiency, making them perfect tools for disaster management. A risk analysis of natural disasters is helpful not only for disaster prevention and reduction, but also reducing economic and social losses .The main focus of this paper is the novel use of Artificial Intelligence(AI) in natural disaster, on the development and application of analysis modules used in early loss estimation system of prevention and reduction of human and social impact, what the project we taken "NATURAL DISASTER INTENSITY AND ANALYSIS AND CLASSIFICATION USING ARTIFICAL INTELLIGENCE".

2.INTRODUCTION:

Natural disasters are inevitable, and the occurrence of disasters dramatically affects the economy and human life. Buildings collapse, ailments spread and sometimes natural disasters such as tsunamis, Earthquakes and forest fires can devastate nations. When earthquakes occur millions of Buildings collapse due to seismological efforts. Floods are the most devastating natural disaster, damaging the properties human lives and infrastructures. Disasters such as forest fires spread rapidly in dense areas so fire fighting is difficult to carry out, in this case development of the strategy to predict such circumstances is crucial so that such disaster can be prevented beforehand. As the technology are continuously improving in aviation system have begun adapting smart technologies to develop unmanned aerial vehicles (UAVS), equipped with cameras which can reach distant areas to identify after effect of natural disasters on human life infrastructure and transmission lines by capture images and videos.

3.LITERACTURE SURVEY:

PAPER 1:

"Disaster intensity-based selection of training samples for remote sensing building damage classification"

-By Luis Moya, Masakazu Hashimoto, Erick mas

This paper is said that machine learning has become a dominant data processing paradigm for the extraction of information from remote sensing data, have been used to better cope with the severe and often catastrophic

impacts of disasters

PAPER 2:

"Natural disasters intensity analysis and classification based on multispectral images using multi -layered deep convolutional neural network"

-By   Muhammad Aamir, Tariq Ali

This paper is based on deep learning is used to detect and classify natural disasters to overcome losses in ecosystem, but detection of natural disasters still faces issues due to the complex and imbalanced structure of images. To tackle this problem, we propose a multi-layered deep convolutional neural network.

PAPER 3:

"Using AI to predict natural disasters for future predication"

-By Seth Guikema

This paper shows the Artificial intelligence (AI)methods have been seen increasingly widespread use in everything. The use of AI has transformed many of these application domains.AI can predict earthquakes, land slide, floods.

PAPER 4:

"An IOT based post disaster alive human detection and alert system"

-By Gracelie G.Parisuthakani

This paper proposes on IoT (Internet of Things)based post disaster alive human detection and alert system which is less time consuming and more efficient. The IoT based post disaster alive human detection system and alert system works with the help of D6T thermal sensors interfaced with Arduino uno and raspberry pi 3 micro-controllers and the location coordinates are given by GPS Module. Its offers IoT module for disaster management which spontaneously post disaster handles the alive human longing to be rescued.

Project Design Phase 2
Customer Journey Map

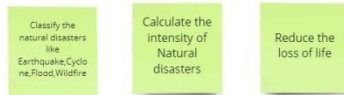| Date	18 October 2022
Team ID	PNT2022TMID47877
Project Name	Project – Natural Disaster Intensity Analysis and Classification Using Artificial Intelligence
Maximum Marks	4 Marks

Customer Journey Map for "Natural Disaster Intensity Analysis and Classification Using Artificial Intelligence":-

Step-1:- GOALS AND NEEDS

This is the journey of a
Game-Changer

Game changers are people who introduce new practices to their organizations. They want inspire others to co-create and innovate together.

What are their key goals and needs?

- Classify the natural disasters like Earthquake,Cyclone,Flood,Wildfire
- Calculate the intensity of Natural disasters
- Reduce the loss of life

What do they struggle with most?

- Natural disasters not only disturb the human ecological system but also destroy the properties and critical infrastructures
- Detection of natural disasters still faces issues due to the complex and imbalanced structures of images.
- Enormous data is needed for classification

What tasks do they have?

- They give images as input using webcam
- They just give images it will produce accurate results
- Early Classification of natural disaster

Step 2:-JOURNEY STEPS

Journey Steps Which step of the experience are you describing?	Discovery Why do they even start the journey?	Registration Why would they trust us?	Onboarding and First Use How can they feel successful?	Sharing Why would they invite others?
Actions What does the customer do? What information do they look for? What is their context?	Customer look for the name of the disaster	Connect with the goole account / Emergency / Take photo	prepared ness / Stay in a safe area or a shelter / Practice safety drills / Stay connected and updated	Creating awareness among the people / sharing the worse experience during the natural disaster / Giving ideas to protect them during disaster
Needs and Pains What does the customer want to achieve or avoid? *Tip: Reduce ambiguity, e.g. by using the first person narrator.*	Unwanted Advertisement / Popup messages	Irrelevent informations / Multiple verification steps / Payed information	Try no to be panic / Always keep emergency kits / Plan for alternate location / proper awarness programs should be conducted	Sharing necessary things to the people who have affected / Sharing the effect of drastic disaster through social media / sharing disaster effect through phone calls or some intermediatory.
Touchpoint What part of the service do they interact with?	Press/Media social media Advertisement Flyers Telemarketing	Email / Advertisement / google notification	always keep firs ai kit / listen to local officials / Be mindful of different kinds of disaster / create an evacuation plan	sharing different perspectives of disaster / sharing food,cloths to the people / proper acknowledgement and sharing the proper ideology behind the disaster
Customer Feeling What is the customer feeling? *Tip: Use the **emoji app** to express more emotions*	🤠	🤔	🙁	🧐
Backstage				
Opportunities What could we improve or introduce?	A website can be created which identifies	The website can be made secure and more accurate so that it will	The customers can give a image as Input and the type of natural	The website can be made available to everyone who need to
Process ownership Who is in the lead on this?	After he website is created it will be in charge of NDRF.	The NDRF team is in lead of the website.	The NDRF team is in lead of the website	The NDRF team is in lead of the website

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Step 3:-JOURNEY OUTCOMES

What changes for them?

Outcome

Describe how the life and environment of the customer changes once they used the product or service.

What are they able to do now?

Customers can easily identify the type of natural disaster.	Easy to identify the natural disaster when disaster image given as input.	Intensity identification when given a disaster image as input.

What can they finally avoid doing?

No need for the continuous searching for the type of disaster.	No need to worry about the intensity calculation of that disaster.	They may not worry about image quality. Produce accurate result.

What changed in my environment?

Earlier identification of natural disaster and intensity analysis.	Due to the product, there is a reduction of risk due to disaster.	The loss of lives and ecosystem are prevented due to easier identification

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Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	18 November2022
Team ID	PNT2022TMID47877
Project Name	Natural Disasters Intensity Analysis And Classification Using Artificial Intelligence
Marks	4

Technical Architecture:
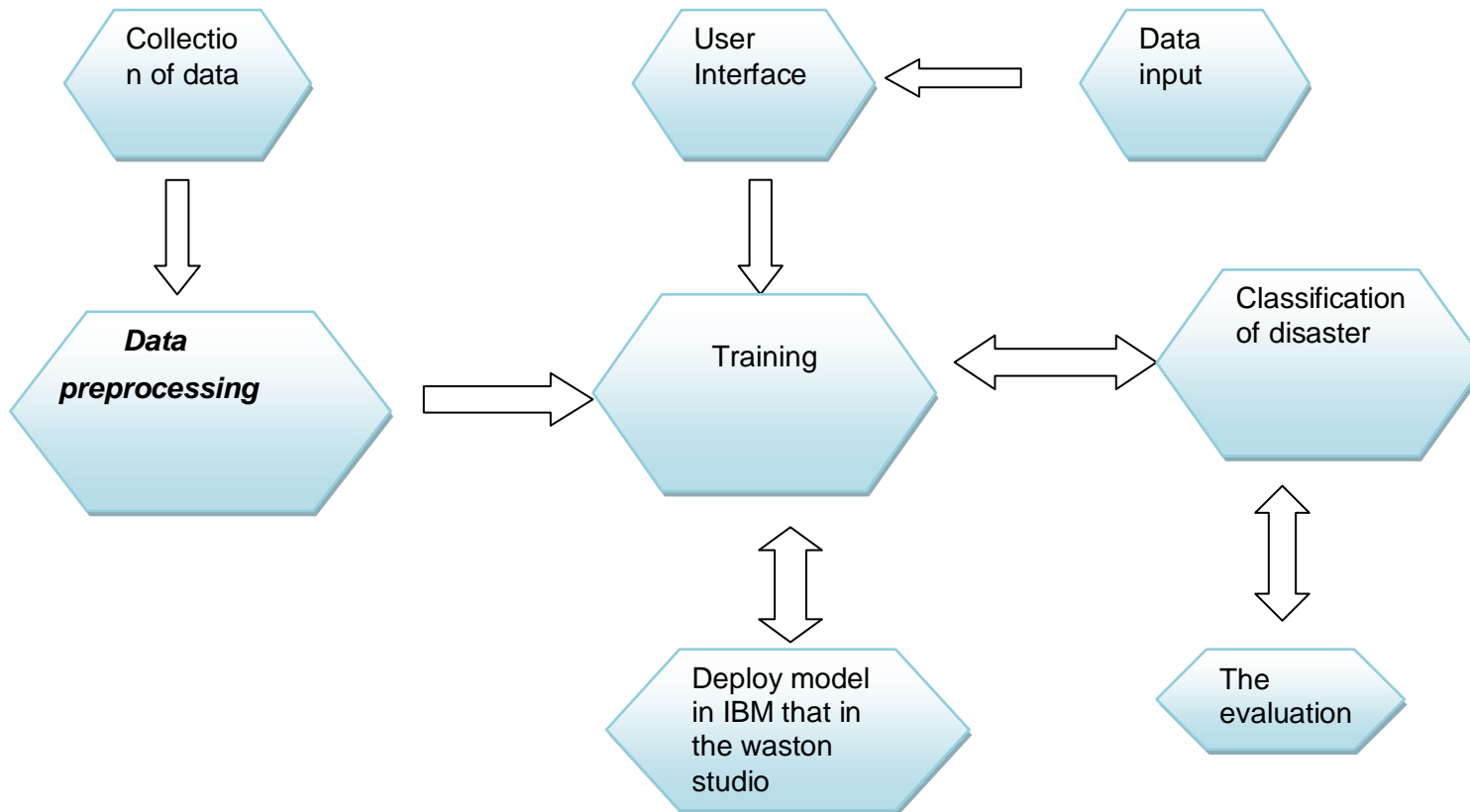
Table-1: **Components & Technologies:**

S. No	Component	Description	Technology
1.	User Interface	User interacts with application for the prediction of Any Natural disaster which will happen in future minutes.	HTML, CSS, JavaScript, Django, Python.
3.	Disaster Prediction	This function is used to predict outcomes from the new trained data to perform new tasks and solve new problems.	Decision trees, Regression, Neural networks.
4.	Evaluation system	It monitors that how Algorithm performs on data as well as during training.	Chi-Square, Confusion Matrix, etc.
5.	Data input	To interact with our model and give it problems to solve. Usually this takes the form of an API, a user interface, or a command-line interface.	Application programming interface, etc.
6.	Collection of data input	Data is only useful if it's accessible, so it needs to be stored ideally in a consistent structure and conveniently in one place.	IBM Cloud, SQL Server.

Table-2: Application Characteristics:

| S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	An open source framework is a template for software development that is designed by a social network of software developers. .	Keras, Tensor flow.
2.	Authentication	This keeps our models secure and makes sure only those who have permission can use them.	Encryption and Decryption (OTP).
3.	Application interface	User uses mobile application and web application to interact with model	Web Development (HTML,CSS)
4.	Availability (both Online and Offline work)	Its include both online and offline work. As good internet connection is need for online work to explore the software perfectly. Offline work includes the saved data to explore for later time.	Caching, backend server.
5.	Regular Updates	The truly excellent software product needs a continuous process of improvements and updates. Maintain your server and make sure that your content is always up-to-date.	• Waterfall Approach • Incremental Approach • Spiral Approach
6.	Personalization	Software has features like flexible fonts, backgrounds, settings, colour themes, etc. which make a software interface looks good and functional.	• Cascade style sheets

Project Design Phase-II
Data Flow Diagram &User Stories

Date	15 October 2022
Team ID	PNT2022TMID47877
Project Name	Project – Natural Disasters Intensity Analysis and Classification Using Artificial Intelligence
Maximum Marks	4 Marks

Data Flow Diagrams:

A data flow diagram is a graphical or virtual representation using a standardized set of symbols and notations to describe a business operation through data movement.

Data Flow Diagram for "Natural Disasters Intensity Analysis and Classification using Artificial Intelligence":
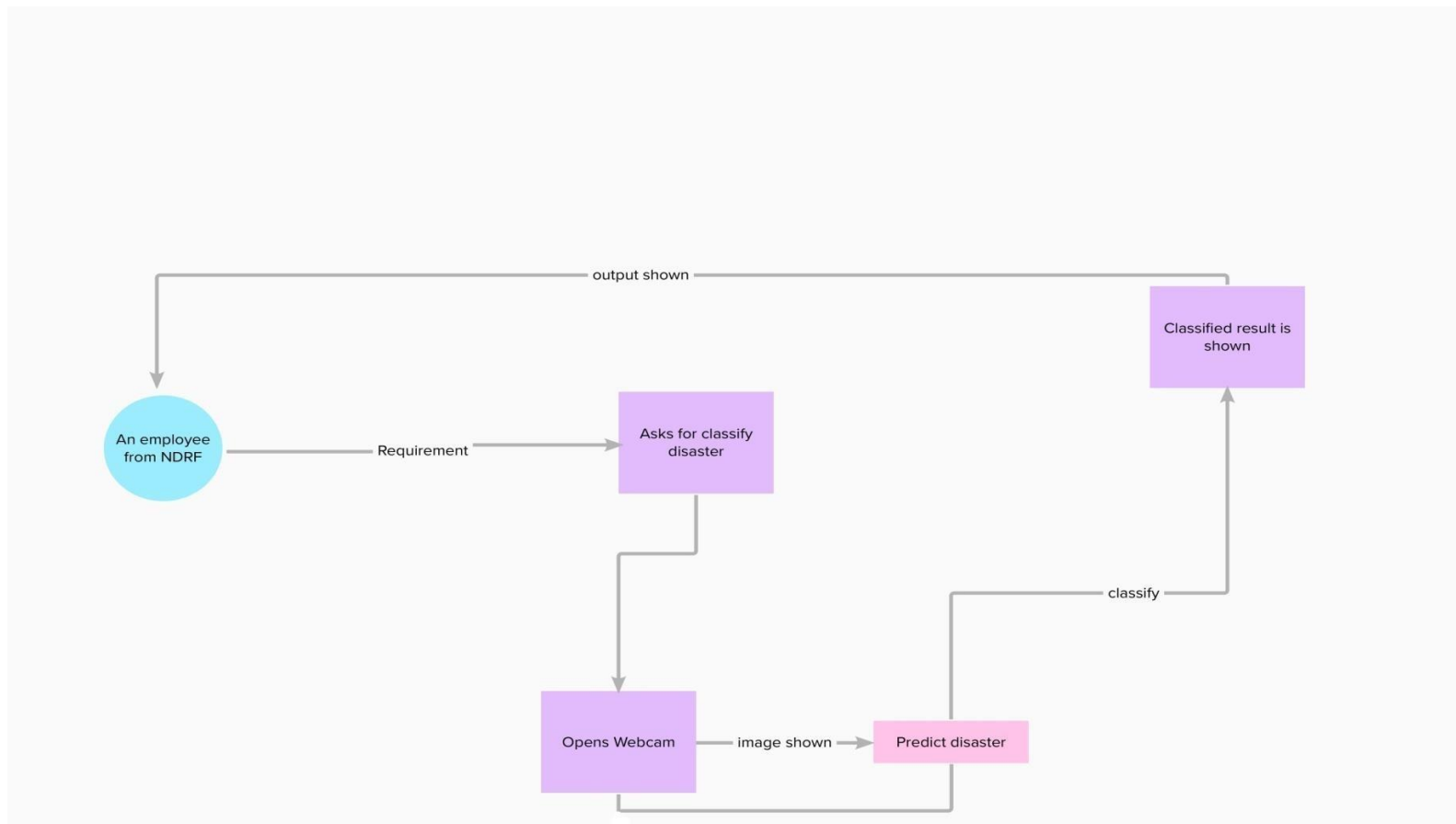
User Stories

Here the list all the user stories for the project "Natural Disaster Intensity Analysis and Classification Using Artificial Intelligence".

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	Registration	USN-1	As a user, registration should be done	Proper email id and password is accepted	High	Sprint-1
Customer	Area to be monitored	USN-2	As user ,I can particularly select the area to be continuously checked and analyzed	The areas should be checked and selected without lapse.	Medium	Sprint-1
Customer	Safety	USN-3	As a user,I should monitor the device is in the secured place which should cover wide area	Safety measures should be done to prevent disaster	High	Sprint-2
Customer	Examination of Natural anamoly	USN-4	As a user,I should analyse the depth of the occurrence of the phenomena	I should monitor the factors which causes disaster	High	Sprint-1
Customer	Battery Backup	USN-5	As a user,I want to check the battery to prevent from power loss	Aware to always keep battery backup .Sometimes it may help in any crucial situations.	Low	Sprint-3
Customer	Algorithm to be used	USN-6	As a user,I should be very conscious in selecting required algorithm	Algorithm provides a correct understanding about the model designed.	Medium	Sprint-4
Customer(Web user)	Internet Connectivity	USN-7	As a user,I should monitor the internet connection periodically	Strong internet connection is required in emergency situations.	High	Sprint-2
Customer(web User)	Social media	USN-8	As a user ,I will be active in social media sites to know more updates about specific diasaster	Active in social media sites to know updates	Medium	Sprint-4
Customer	Prediction and analysis of data	USN-9	As a user,I can ale to predict and visualize data	Using algorithms and some visualization	High	Sprint-3

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
				To predict the disaster by techniques		
Customer	Generating the possible outcome	USN-10	Disaster occurrence generate by a user possible	Several disasters can be captured	High	Sprint-4

CONCLUSION

It focused how image from given dataset (trained dataset) in field and past data set used predict the pattern of different nature disaster using CNN model. In the system had applied different type of CNN compared the accuracy. The natural disaster in Indonesia frequently happened, due to the geographical position of the country. Thus, natural disasters mostly occurred as an impact of the natural condition. However, the weather and climate condition has also influenced and triggered dataset.

FUTURE SCOPE

In the future, the research will be continued to obtain the data from all over the country, not only west java province, and with the use of more complete analysis, so that the government or related institution could make a better anticipation work as a mitigation effort.