Project Design Phase-I

Date	24 September 2022
Team ID	PNT2022TMID06841
Project Name	Project – Intensity estimation of tropical cyclone.
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Tropical Cyclone brings heavy loss to life and property across the nation. The devasting effects of the cyclone cannot be prevented at all, but safety measures can be taken in advance. The solution aims at estimating the intensity of the tropical cyclone from the IR images of cyclone.
2.	Idea / Solution description	We are proposing the Deep Learning based CNN architecture for estimating the intensity of the cyclone. The UNet based CNN model is used, which takes the IR images of the cyclone taken from the INSAT-3RD satellite generates the features. The features obtained from the CNN model is given into the regression model which estimate the intensity of the cyclone.
3.	Novelty / Uniqueness	We are proposing our very own architecture, which has single CNN model for feature extraction and a machine learning model for regression.
4.	Social Impact / Customer Satisfaction	The model will be hosted in the cloud. In the web application, the user can upload the IR image of the cyclone it gives back the estimated intensity of the cyclone. The IR images can be obtained from *mosdac* website. The INSAT 3RD satellite will send the IR imagery of Indian subcontinent for every 15 mins.
5.	Business Model (Revenue Model)	Once the model is deployed, we can use a pay per use or subscription model. Where use can pay for their usage.
6.	Scalability of the Solution	The proposed architecture is highly scalable, It can correctly predict the intensity of cyclone that can occur over any parts of Indian Sub-continent.