COSMOLIGENCE

Damage Detection and Segmentation Model

Presented to:

Cosmolligence

Project by:

Team-Ctrl Alt Elite

Problem Statement:

Natural disasters have caused a huge havoc on public property. Build a solution that can detect from images, the damaged building and its severity. A dataset for the same can be accessed by :-

https://eod-grss-ieee.com/dataset-detail/OWlUN0k3T0tnNVo2Rk5mNjFxTkhwZz09

Feel free to use any other related external datasets.

Approach:

Data - https://eod-grss-ieee.com/dataset-detail/OWlUN0k3T0tnNVo2Rk5mNjFxTkhwZz09

Data description - A train folder with images and a json file for labelling description

Step1 - To create the data usable for yolo format which is a train folder with two subfolders image and labels both containing same number of files a text and a jpg file, text file containing labeling description

Step2 - To create yolo usable format, a python code was used

Step3 - Loading the yolo v7 widths and model in google colab using the github repository (https://github.com/WongKinYiu/yolov7)

Step4 - Modifying the data.yaml file to train it for custom dataset that is for only 4 classes

Step5 - Mounting the drive in google colab and uploading the dataset that is the train and val folder containing label and image subfolder each

Step6 - Uploading the initial weights of the yolov7 model from https://github.com/WongKinYiu/yolov7/releases/download/v0.1/yolov7.pt

Step7 - Training the model for 64 epochs and testing it with 0.5 confidence