

SMAI Project Phase-2

Prof. Vineet Gandhi (Section-A)

Deadline: 3rd May, 2025

1 General Instructions

- You are allowed to use any model of your choice for this task (CNN, transformer, etc. pre-trained or built and trained from scratch).
- We will setup a contest on Kaggle where you will submit a file that contains the predictions for the test set (will be shared with the contest).
- A leader board will be maintained on Kaggle for the scores. Further instructions (test set, etc.) will be released with the contest link in a few days.
- Use the validation set given here to judge the performance of your models locally for now.
- Do not approach the TAs to find out if your metrics are good or how good (at best) they can get.
- We will be asking you to submit your code files. Cases of plagiarism will be strictly handled.
- Those who did not submit or submitted in wrong format or didn't fulfill requirements will be given 0 even if they attempt phase-2 or make submissions in the Kaggle contest.
- We want you to start working on the task as soon as possible. Once the contest is set up, you can start making a fixed number of submissions everyday.
- You can use Kaggle, Google Colab, etc. for GPUs.
- You have sufficient time (almost 1 month) to iteratively improve and come up with new ways to do this task.

2 Task

- The dataset collected in Phase-1 has been pooled to create a large dataset for images taken across campus.
- Your task is to predict the latitude, longitude, angle and Region_ID for a given image (input).
- Latitude and Longitude have been scaled appropriately to suite this task.
- Region_ID (1-15) is the id assigned to the region in which the image was taken. Angle and Region_ID values have not been modified.
- You may choose to predict the four labels using either separate models (one for each label) or a single combined model.
- The performance metric will be MSE for latitude, longitude and angle, and accuracy (0-1, upto 6 decimal places, ex: 0.616235) for Region_ID. Total 4 different scores will be considered for final project marks calculation: MSE for latitude, longitude and angle (each calculated separately) and the accuracy score for Region_ID.

3 Dataset

Download datasets from google drive using Link.

All the best!