DANA4800 – PROJECT TEAM WORK REQUIREMENT

Now you are data, let's do some training and testing.

- Task 1: Train and test your data on a single class. For example, 'plant plots' is one class, and you train and test on this class only. If you have a set of 120 images, it might not be enough to train. Therefore, you will need to increase the sample size by using "augmentation", including flipping, rotation, change in color, Gaussian noise, blurring effect, RGB shifts.
- Task 2: Train and test your data on multiple classes. Use all of your team classes to train and test. Again, increase the sample size using various augmentation technique.

Each task, you are required to understand the results of the training and testing phases. Report on different metrics in predicting objects/classes. To create a training and testing dataset, you use a threshold of 90:10 before running the augmentation. If you decide to run augmentation for the testing set, remember to run the augmentation separately from the training set.

Report on possible issues related to augmentation. You are required to explore at least 1 augmentation technique, besides the ones that I provided.

Report on your improvements after the first run of Yolo using the A3 dataset.

Submission requirements:

- Codes: a suggestion is that the code for augmentation and Yolo should be separately. If you use Google Colab, remember to export the code with the output.
- Spreadsheet reporting which set of images are for the training and testing phases.
- A report/spreadsheet/power point showing the results of different iterations of training and testing.
- A word document explain your understand on Yolo V8 principle and structure, and the IoU concept (intersection and merge). This section focuses on the explanation of how Yolo works and learns to be able to detect objects and how to interpret the results.

Mark Distribution

Augmentation Technique	30
Understanding the results of Yolo	40
Improvements of the results after the first trial	30
Total	100