Comments on training and evaluation

•Trial and error for tuning models – tune hyperparameters like optimizers, loss functions, learning rate, batch size, augmentations, number of layers, etc.

•Further exploration: Change networks. (Eg: Replace EfficientNet by ConvNext,etc)

•Keep checking validation accuracy while training. If there is a gap between validation and train accuracy, it might be overfitting. Use more data augmentation, batch normalization, dropouts, etc.

•High chance that your model is underfitting if you are not running enough number of epochs. Plot loss curves to check if the loss has converged.

•For testing, do not just rely on one metric like accuracy. Plot recall, precision, F1 score and confusion matrix along with balanced accuracy.

Deliverables:

•Explore the training procedure and improve model performance by tuning the hyperparameters. **Write a report** on what hyperparameter tunings helped or what did not help in enhancing the model performance and comment on 'why'. Provide code snippets and plots to demonstrate.

•Report the test accuracy using multiple metrics (show balanced accuracy, recall, precision, F1 score and confusion matrix). You can use tf/keras or sklearn which is a good machine learning library. Tabulate your results in the report.

•Reflect on what you learnt from the training procedure and these investigations.

Next week Deliverables: (NOT THIS WEEK)

Writing a final report consolidating the reports from these 6 weeks with the following sections:

•Abstract

•Introduction and Background

•Materials and Methods

•Experiments and Results

•Discussions

•Conclusion and Future Directions