DA 312, Advanced Machine Learning Laboratory

Lab 4 (Spring 2025)

Instructor:	Dr. Chiranjib Sur	**Time:**	Wednesday - 9:00-11:00 (MDSAI Lab)
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Problem 1: [10+20+20+20+10+10+10 marks]

Consider the following Dataset

https://www.kaggle.com/datasets/andrewmvd/isic-2019?select=ISIC_2019_Training_Metadata.csv

1. Using this dataset, explore and create a detailed report of the class and image examples. Use Jupyter Notebook to create.

2. This dataset is related to a disease and must be modeled with recall, precision, and F1-score. Create a ResNet model for this.

3. Adopt a pre-trained ResNet model for this. No training is required.

4. Finetune a ResNet model for this. Use the pre-trained ResNet model for fine-tuning.

5. Compare the above three and which one is working better, comment on that.

6. Use multiple ResNet versions and do a comparison.

7. Can you plot the error rate (used for back-propagation) and misclassification error for a training and testing session?

8. Include TensorBoard (This is for practice).