ECE 6397 – Introduction to Machine Learning

Assignment – 5

Part B

iNaturalist Dataset Classification with ResNet18

This project demonstrates how to use a pretrained ResNet18 model to classify images from the iNaturalist dataset. The code leverages PyTorch and Google Colab for training and evaluating the model.

- The dataset directory structure and paths need to be correctly specified for loading the data.

1. Download and Unzip Dataset

- Use the link found in the assignment document for the data set to download the dataset.

- Unzip the downloaded dataset and organize it into the appropriate directory structure.

2. Install Required Libraries

- Install necessary Python packages, including 'torch', 'torchvision'

3. Prepare Dataset and Dataloaders

- Define the transformations for the training data

- Load the train data set

4. Loading the pretrained model

- Loaded the pretrained ResNet18 model from PyTorch's pre-trained models with out parameters

- change the dense layer compatable with our classes

5. Training the model

- Train the model with the training data

- Calculate the loss and accuracy of the model

- print the accuracy and loss for each epoch.