Report

Classification of domestic vs wild cats using TRANSFER LEARNING

Approach

- Load the pretrained model VGG16
- When loading the model, the “include_top” argument can be set to False, in which case the fully-connected output layers of the model used to make predictions are not loaded, allowing a new output layer to be added and trained.
- Perform feature extraction
- Set weights =’imagenet’
- plug the output of the convolutional part into a classifier
- Compile and train the newly built model
- Test the model on test dataset
- Perform calculations

Preprocessing

The dataset is split into train and test in the ratio of 80:20

Further train data is also split into train and validation in the ratio of 80:20

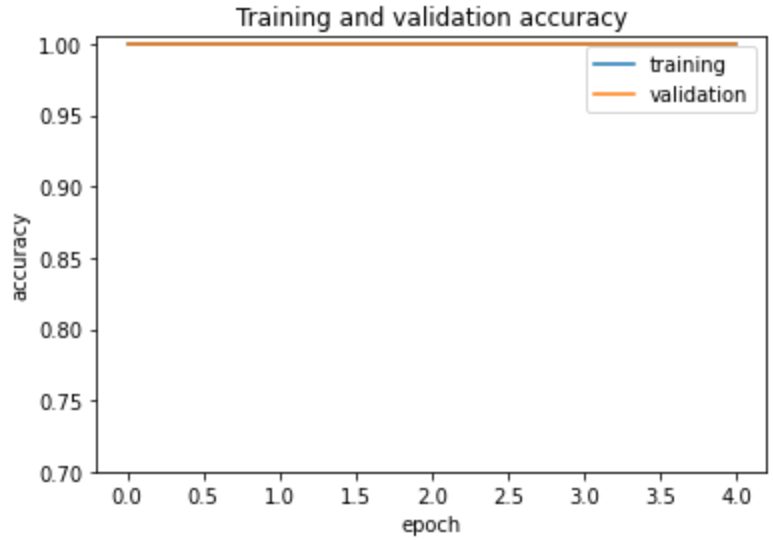
Model

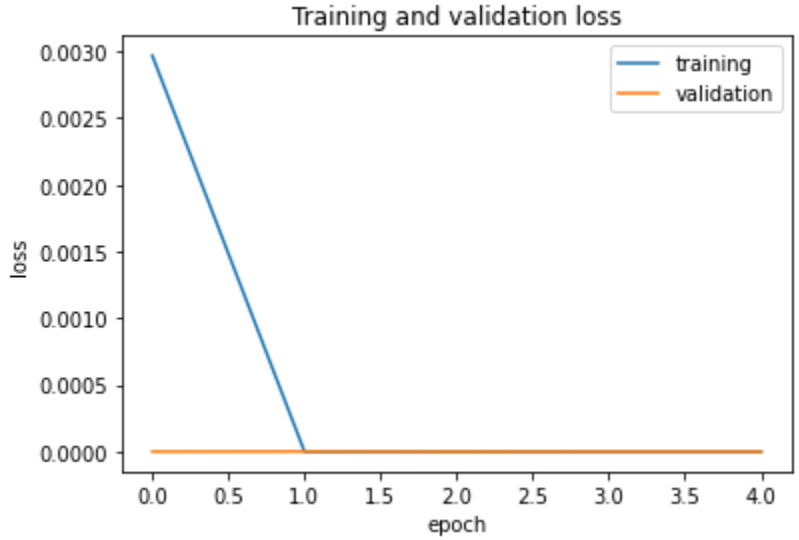
built using VGG16 with weights=’imagenet’

Optimizers Used

- Adamax with learning rate of 0.001

Plots and Evaluation Metrics





Overall Categorical Accuracy: 95.31%

Confusion Matrix

[[160 0]

[15 145]]

	Precision	Recall	F-Score	Support	Specificity
cats	0.914286	1.00000	0.955224	160.0	1.0
big_cats	1.000000	0.90625	0.950820	160.0	1.0

Accuracy Results

Transfer learning accuracy = 95.31%