

Final Weights File:

https://drive.google.com/file/d/1bvtgr3oRjy2U00Wnhme9Vn5k6CoC4kv2/view?usp=drive_link

Overview:

Used ResNet-50 as the backbone to our transfer learning task. We unfroze the last convolution block, and connected the fc layer to our data accordingly. We were able to produce around a high of 66% test accuracy on kaggle.

Using a batch size of 128 and an input of 224x224, training this network is hardware demanding.

Usage Instruction:

- 1) Download and place the dataset zip file into the main directory of your google drive and open up the .ipynb file in google colab.
- 2) The first block of code will mount your google drive, and authentication will be required.
- 3) Everything else will run natively in colab; there is no need to modify file paths.

Experimental Setup:*Training Pipeline:*

Custom Dataloading
Data Preprocessing
Data Visualization
Hyper Parameter Setup
Train / Validation Loop
Test Data Inference
Model Evaluation

Hyper Parameters:

Random Seed = 12168423785814237708
Input Size = 224x224 pixels
Batch Size = 128
Learning Rate = 0.0001
Loss Function: Cross Entropy
Optimizer: Adam
Epochs = 25

Preprocessing consisted of RGB channel normalization

Network architecture: Unfreezing last convolution block and fc layer, and putting a dropout layer between them

Final Model Loss/Acc:

epoch: 25 | train loss: 0.0001223667641170323 | val loss: 1.4996 | val accuracy: 62.9630%

Predictions:

