

Image Classification with Fine-tuning of Pre-trained Models

Brage Wiseth

March 15, 2024

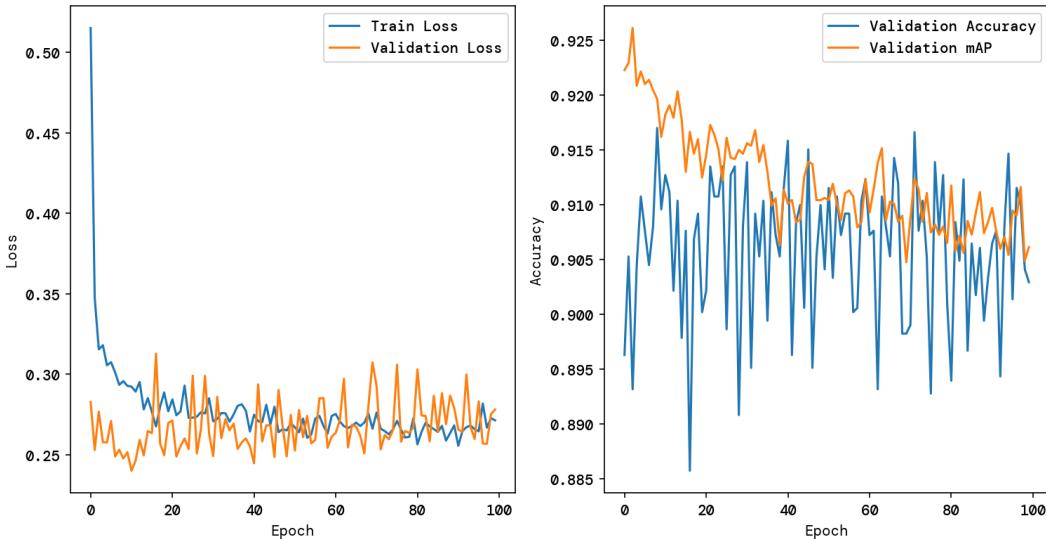


Figure 1: Training of the model. The training loss is shown in blue, and the validation loss is shown in orange. The training accuracy is shown in green, and the validation accuracy is shown in red. The model was trained for 10 epochs.

The model used was a pre-trained ResNet18 model, which was fine-tuned on the ImageNet dataset using the PyTorch library. The model was fine-tuned with a linear head on top of the pre-trained model, and the learning rate was set to 0.001. The optimal learning rate and optimizer of those used were found to be the Adam op-

timizer with a learning rate of 0.001. The model was trained for 10 epochs, and the learning rate was decayed by a factor of 0.1 after 5 epochs. The model was trained on a dataset Reported percentage of non-zero activations in the feature maps across 200 images [0.8, 0.7, 0.6, 0.5, 0.4]

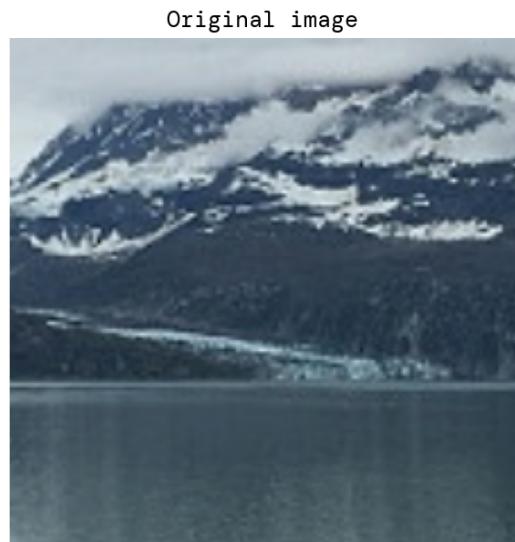


Figure 2: Original image

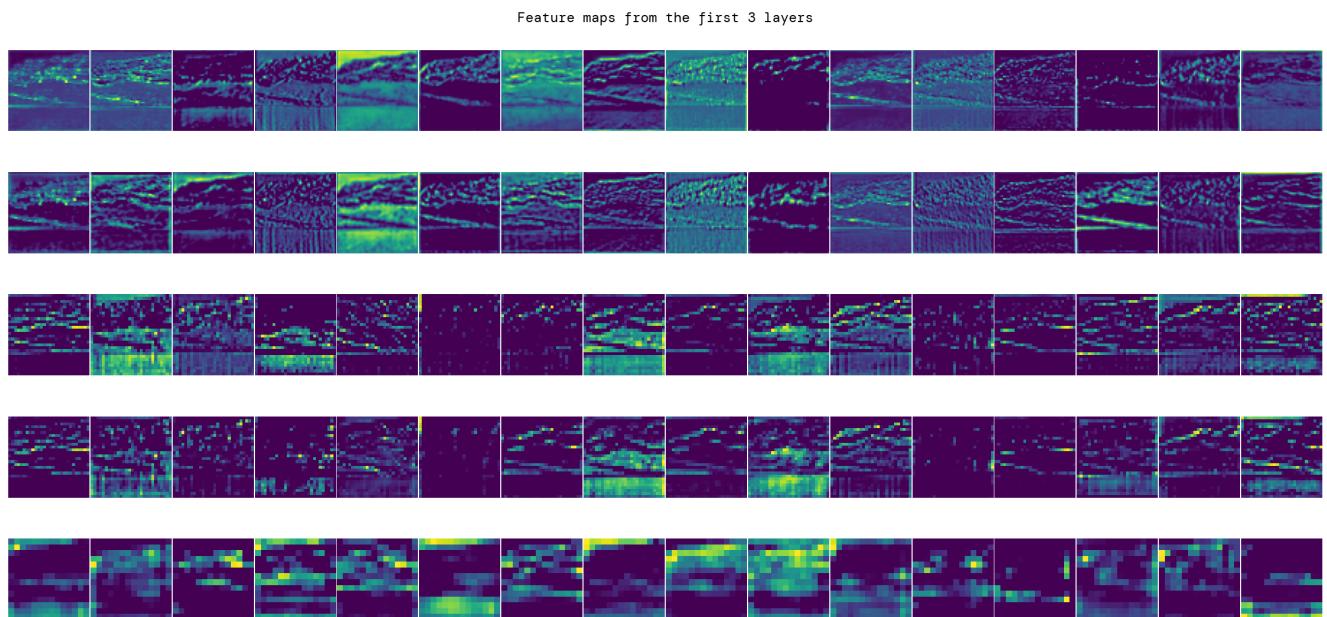


Figure 3: Feature maps of five activations of the model, from shallow to deep layers top to bottom



Figure 4: Ten best and worst images of the buildings class

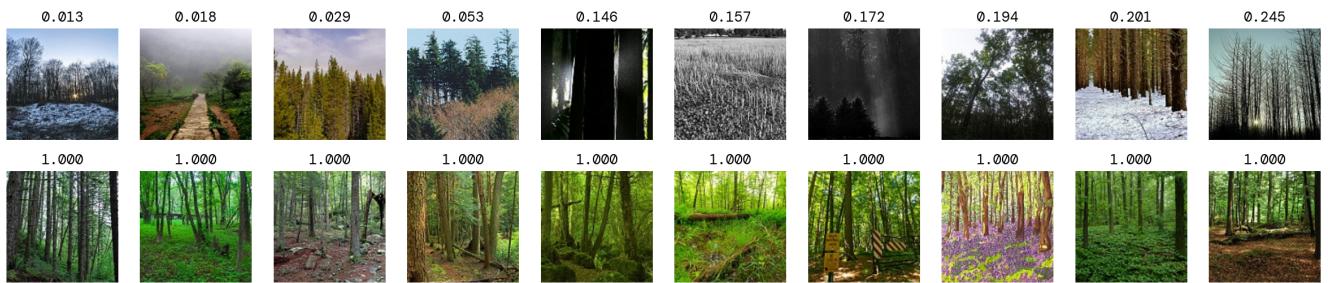


Figure 5: Ten best and worst images of the forest class

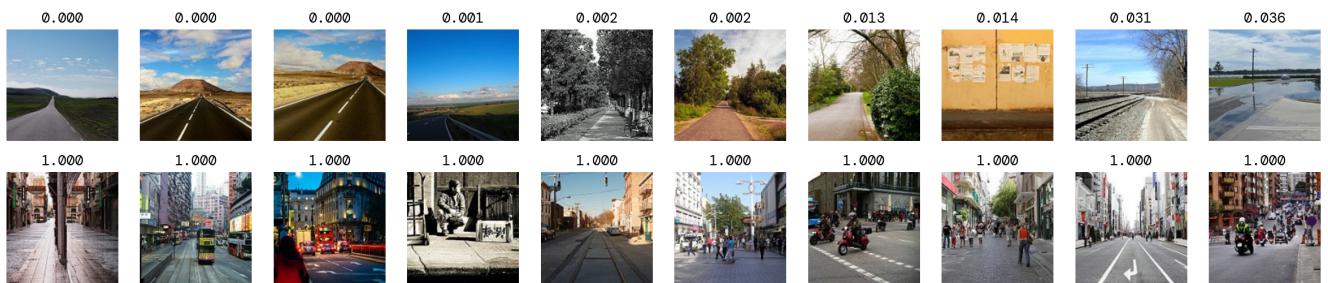


Figure 6: Ten best and worst images of the street class