Amirkabir University of Technology

Neural Networks

HW4

Q1) Download the Linnaeus 5 dataset (128x128) and create a convolutional neural network for a classification task.

Q2) Add skip connections to your model and analyze the impact on training speed, convergence, and other relevant factors.

Q3) Visualize the output of the first layer to demonstrate how your model detects edges in the images.

Q4) Implement inception mode as you can see in Figure 1

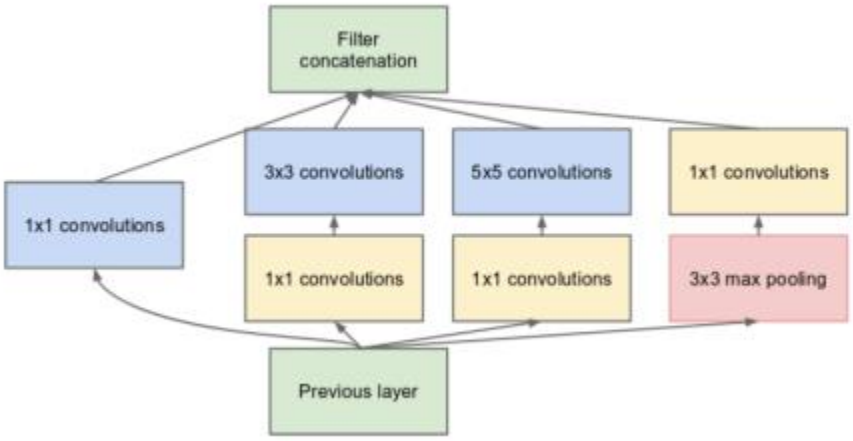

Figure 1

Q5) In the first step of transfer learning, the weights of the feature extraction part are non-trainable. Explain why this adjustment of weights is necessary in a paragraph.

Q6) Utilize the previously created model from question 4 to train it on the Flower dataset.