

This program is compiled based on Python 3 in TensorFlow. The main code of the program is stored in \NST_VGGNet.ipynb. Part of the sample raw data is stored in \sample_data\subset.

In the process, we build practical experience and develop intuition around the following concepts:

- 1) Eager Execution – we use TensorFlow's imperative programming environment that evaluates operations immediately. We build a subset of our model that will give us access to the necessary intermediate activations using the Functional API
- 2) Leveraging feature maps of a pretrained model.
- 3) Create custom training loops - we examine how to set up an optimizer to minimize a given loss with respect to input parameters.

We follow the general steps to perform the program:

- 1) Visualize data.
- 2) Basic Preprocessing/preparing our data.
- 3) Set up loss functions.
- 4) Create model.
- 5) Optimize for loss function.