Style Transfer - background

- Style transfer allows you to take famous paintings, and recreate your own images in their styles!
- ***The Wave***, is a woodblock print by the Japanese artist Hokusai. The style of this painting is applied to an image of a Cat.

Step 1

- Download a local copy of code from github.
  - What is github?

- Go to command prompt and in a folder run

```
git clone https://github.com/lengstrom/fast-style-transfer.git
```

This will copy the code from above repository to a local folder named “fast-style-transfer”

Step 2

- Prepare a conda environment with required packages

```
conda create -n style-transfer python=3.5
activate style-transfer
pip install tensorflow
conda install scipy pillow moviepy
```

Step 3

- Download pre-trained network trained with “Rain Princess” by Leonid Afremov
  - https://d17h27t6h515a5.cloudfront.net/topher/2017/January/587d1865_rain-princess/rain-princess.ckpt
  - Save it with file name “rain_princess.ckpt” in code folder created in setp 1

Step 4

- Download a sample image

Step 5

- Apply rain_princess style on this image

```
python evaluate.py --checkpoint ./rain-princess.ckpt --in-path
bangalore-16.jpg  --out-path ./output_image.jpg
```

Step 6

- Apply on videos

```
python transform_video.py --checkpoint ./rain-princess.ckpt --in-
path sample.mp4  --out-path ./output_video.mp4
```

Step 7

- Other pre-trained models available:
- Rain Princesss, by Leonid Afremov:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/587d1865_rain-princess/rain-princess.ckpt
- La Muse, by Pablo Picasso:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/588aa800_la-muse/la-muse.ckpt
- Udnie by Francis Picabia:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/588aa846_udnie/udnie.ckpt
- Scream, by Edvard Munch:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/588aa883_scream/scream.ckpt
- The Great Wave off Kanagawa, by Hokusai:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/588aa89d_wave/wave.ckpt
- The Shipwreck of the Minotaur, by J.M.W. Turner:
  - http://video.udacity-data.com.s3.amazonaws.com/topher/2017/January/588aa8b6_wreck/wreck.ckpt

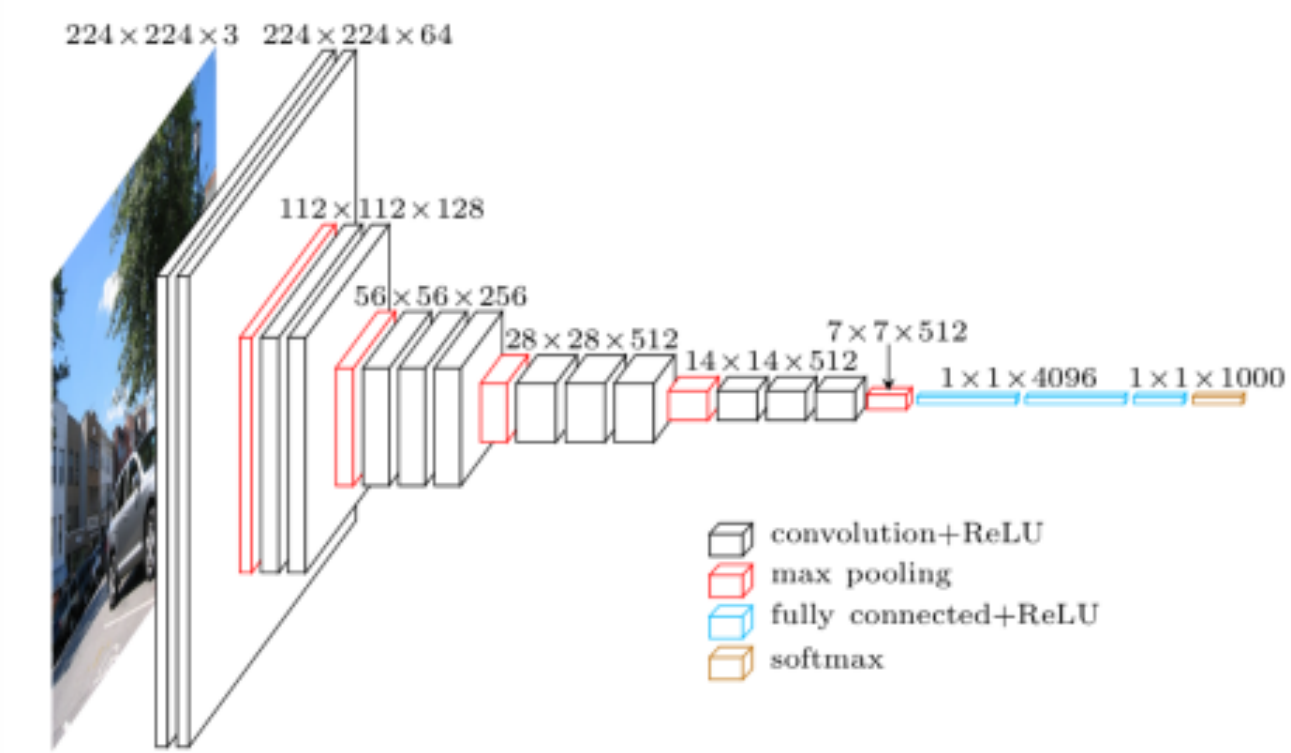
Step 8

- You can train the network to learn style of your own images. Detailed instructions are available at

`https://github.com/lengstrom/fast-style-transfer/blob/master/docs.md`

Step 9

- The neural network used for this looks like:



VGG 16 came from Oxford's Visual Geometry Group in 2014 and won an annual competition of image classification. It is a very popular architecture of all image processing applications using Deep Learning

You can read the original paper - https://arxiv.org/pdf/1409.1556.pdf