

CS60050 Machine Learning
Autumn 2016-17

Term Project Report

ArtificiallyArtistic

Project title

Artistic Rendering of Images

Group members

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Problem definition

Separation of style and content of images and subsequent application of a set of styles to an input image, implemented first using bilinear models and then with Convolutional Neural Networks.

Methodology

<first explain in details about the bilinear model approach, then CNN>

<we can include a timeline of month-by-month work>

<obstacles faced>

Technologies and libraries

We used Python 3 as the main programming language during the course of the project. A bit of Bash scripting was involved as well.

Google's TensorFlow was chosen as the AI library for the purpose for the project since it is open-source and widely popular. Also, using TensorFlow in Python is extremely simple; many

complex operations are often reduced to one or two lines of code. This allowed us to dedicate our time and concentration on actual techniques involved rather than worrying about the implementation details.

Scope of future work

Although we had initially planned upon extending the style transfer model to videos towards the end of the project, we could not accomplish the same due to constraints of time.

There is good scope to apply the same techniques to stylize videos and to understand what additional things we need to take care of while handling videos, as compared to still images. For example, it must be ensured that the transformation is lossless. The issues of optical and temporal coherence are also to be handled.

Results

Style Used :



Below are some of the inputs and corresponding outputs of the from the trained model.

#1

Input:



Output:



#2

Input :



Output:



#3

Input :



Output:



#4

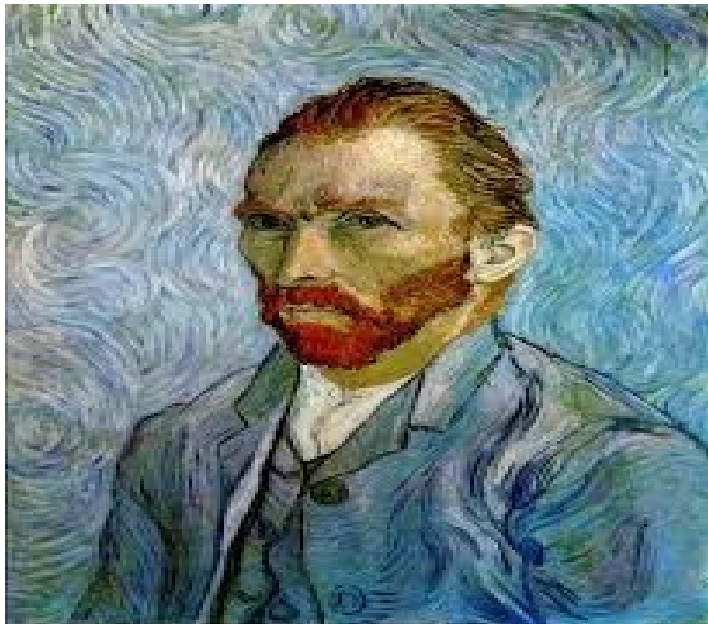
Input:



Output:



Style Used:



Below are some of the inputs and corresponding outputs of the from the trained model.

#1

Input:



Output:



#2

Input:



Output:



#3

Input:



Output:



#4

Input:



Output:

