DURHAM COLLEGE
SUCCESS MATTERS

Project Proposal

Project Title	:	**Neural Style Transfer**
Course Name	:	**Capstone II**
Course Facilitator	:	**Marcos Bittencourt**
Group Number	:	**Group - 9**
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Introduction

Neural Style Transfer refers to a class of software algorithms that manipulate digital images, or videos, to adopt the appearance or visual style of another image. It is an optimization technique used to take three images, a **content** image, a **style reference** image (such as an artwork by a famous painter), and the **input** image you want to style — and blend them together such that the input image is transformed to look like the content image, but “painted” in the style of the style image.

Scope

The scope of the project is to generate an artistic image by blending two images together (Content Image and Style Image) using Neural Networks. The end result will be an image that will have a content of the original image but will be styled in a way like it is painted by a painter (whose style image will be imported).

However, in the future, given proper bandwidth to carry the project, the scope will be extended to generating images from the text.

Approach

The approach is to use the pre-trained models which will detect the features in the image. Various pre-trained models will be tried and tested like VGG-16, VGG-19, and Inception Networks. Below is a high-level representation of the architecture that will be adopted to perform the task described above.

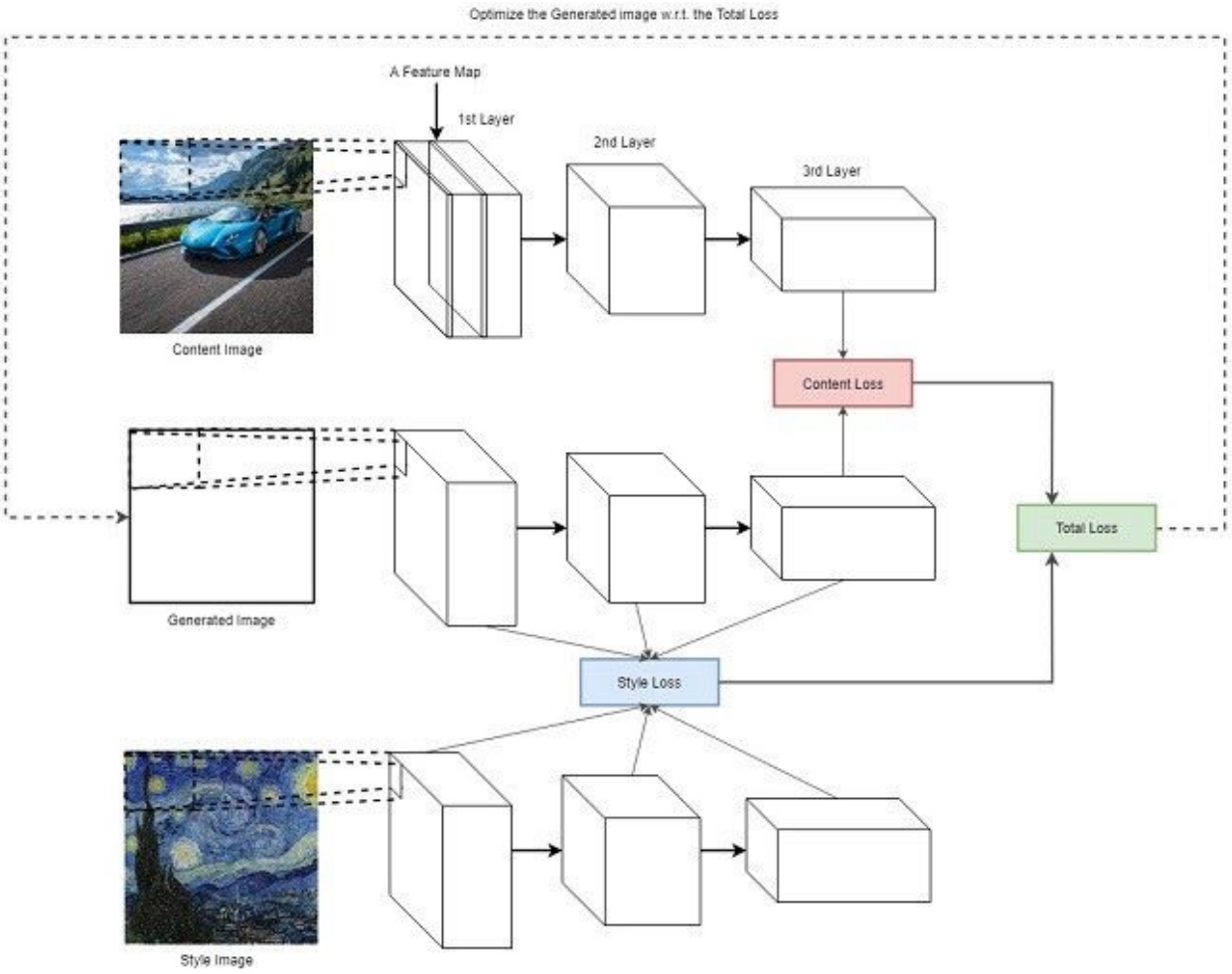

Image sources:

- https://jvns.ca/blog/2017/02/12/neural-style/
- https://towardsdatascience.com/light-on-math-machine-learning-intuitive-guide-to-neural-style-transfer-ef88e46697ee?gi=b359b9be897b