Neural Style Transfer NeuralArt - Stylize your Image

Avishi Gupta, Vaseem Naazleen, Shivangi Tomar

24 August 2020

Team - 38 NST 24 August 2020 1/11

Overview

Our project aims to stylize image by implementing A Neural Algorithm of Artistic Style paper by Leon A. Gatys, Alexander S. Ecker and Matthias Bethge.

https://arxiv.org/pdf/1508.06576.pdf

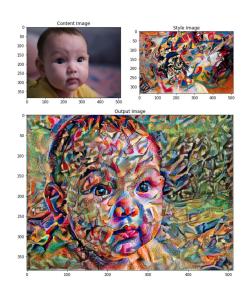


Team - 38 NST 24 August 2020 2 / 11

What is Neural Style Transfer?

- Neural Style Transfer is an optimization technique.
- Input:
 - Content image
 - Style reference image
- Output:
 - Stylized image: looks like the content image, but painted in the style of the style reference image

Example



Key Finding

The representations of content and style in the Convolutional Neural Network are seperable.

5/11

Technical Stack

- Keras
- Tensorflow
- NumPy
- SciPy
- Matplotlib
- Flask

24 August 2020

6/11

Status and Statistics

- Project completed.
- Total number of commits: 206
- Total lines of code: 1122

Team - 38 NST 24 August 2020 7/11

Learnings

- Version Control System.
- Presentation using Beamer.
- Convolutional Neural Networks.
- HTML, CSS and JavaScript.

Difficulties Faced

- The program was taking lot of time to output stylized image.
- Allocating space for user images.

Team - 38 NST 24 August 2020 9 / 11

Future Extensions

- Apply neural style transfer algorithm on videos
- Edit photos of different formats
- Photo editor- image enhancement, image manipulation, crop, rotate etc

Team - 38 NST 24 August 2020 10 / 11

Thank You!