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GITHUB LINK - https://github.com/IT18194890/Neural-Style-Transfer.git

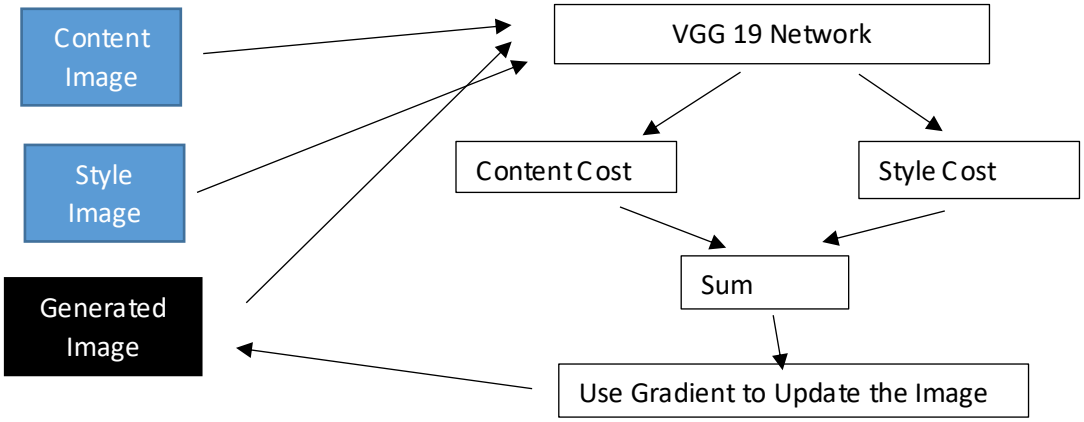
Neural Style Transfer

Neural Style Transfer is a Technique Which can blend 2 Images and get a Creative Output. There are 2 types of Images, Content Image and Style image. So this 2 Images will Blend Together and the Content Image will transform into a Painting in the Style of the Style Image. The Blended image output is called the Generated Image. This is Similar to the Prisma App.

The Generated image is initially defined as the Content Image. These 2 images are put into a neutral network (VGG19) and the outputs from the particular layer are extracted by a forward propagation. And then evaluate it with the content cost Equation. Evaluate the style cost the same way. In Order to do that we need to use Gram Matrices.

Gram Metrix measures the value G and measure how the activations of the filter i is similar to activation of filter j. This is an Important factor in style transfer. Then the style cost for the generated(G) and styles(S) images are calculated using the style cost Equation, the Cost Function Equation. Where Alpha and Beta Are Hyper parameters that user can use in order to Adjust the Output.

Once the Cost is Evaluated the network evaluates the gradient of the cost with respect to the generated images and carries out backward propagation.



References -

- "A Neural Algorithm of Artistic Style" by Gatys et al., originally released to ArXiv 2015 - http://blog.weitzinvestments.com/reader/ebook.php?article=a%20neural%20algorithm%20of%20artistic%20style%20pdf%20arxiv&encrypt=3462b87df9a63dc1637e0cd0a210e99b

- https://www.researchgate.net/publication/335082247_Research_on_Neural_Style_Transfer_Algorithm

Instructions

1. Download Images Content .jpg and Style.jpg.
2. Open Neural Style Network.ipynb using google colab.
3. Run the cells and upload the 2 images when they are asked by the notebook.
4. In Order to use Your Own Images, change the hyperparameteres accordingly and upload the Images when asked.
5. Save the Generated Image