NEURAL STYLE TRANSFER

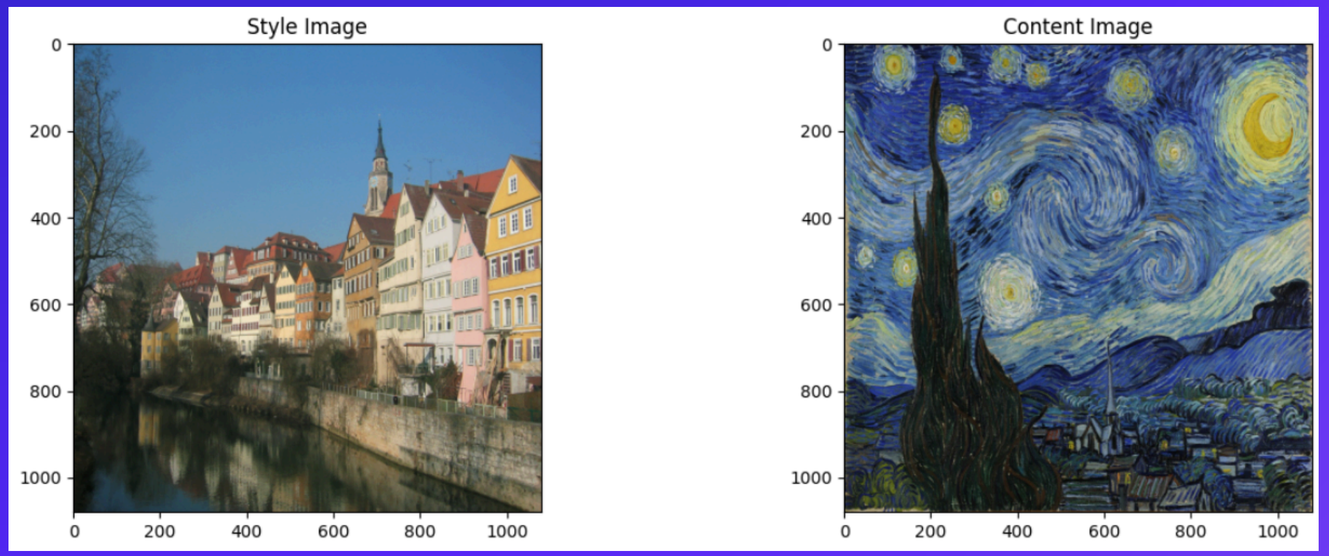
TRANSFORMING IMAGES INTO ARTISTIC MASTERPIECES BY USING NEURAL STYLE TRANSFER

By Pradhum Shrivas

INTRODUCTION

TRANSFORMING IMAGES WITH DEEP LEARNING

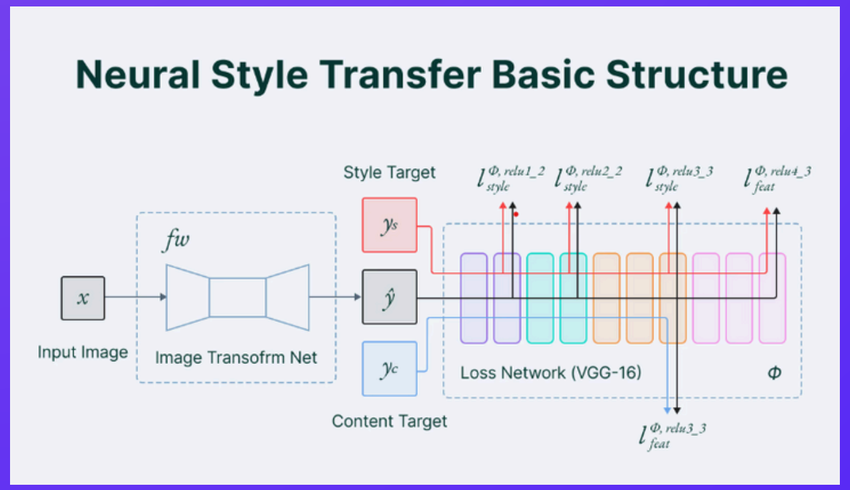
Neural style transfer is an optimization technique used to take two images — a content image and a style reference image (such as an artwork by a famous painter)—and blend them together so the output image looks like the content image, but “painted” in the style of the style reference image.

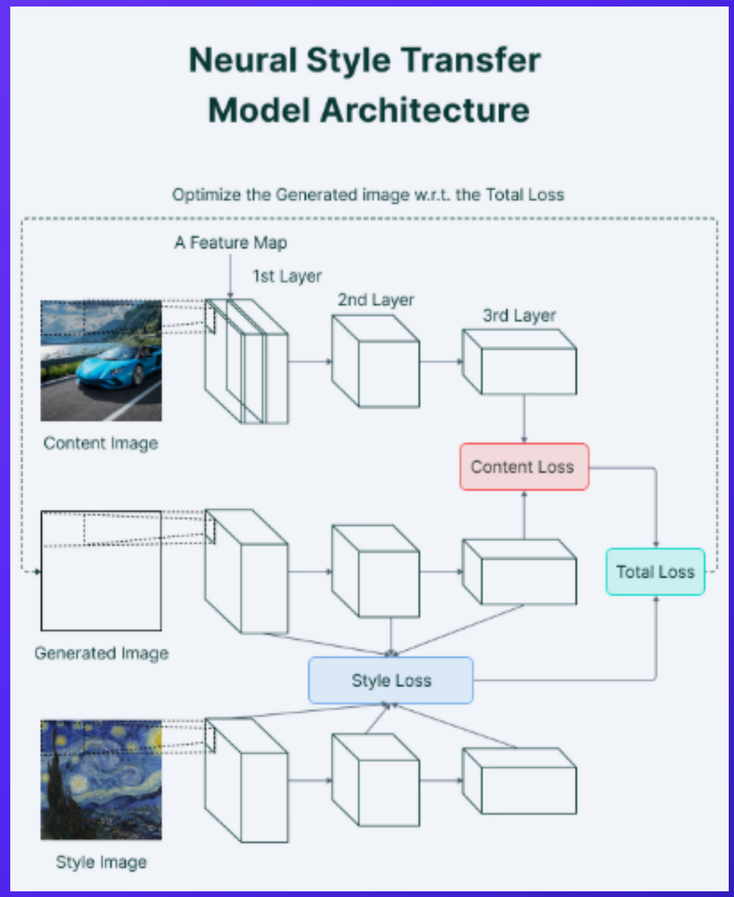


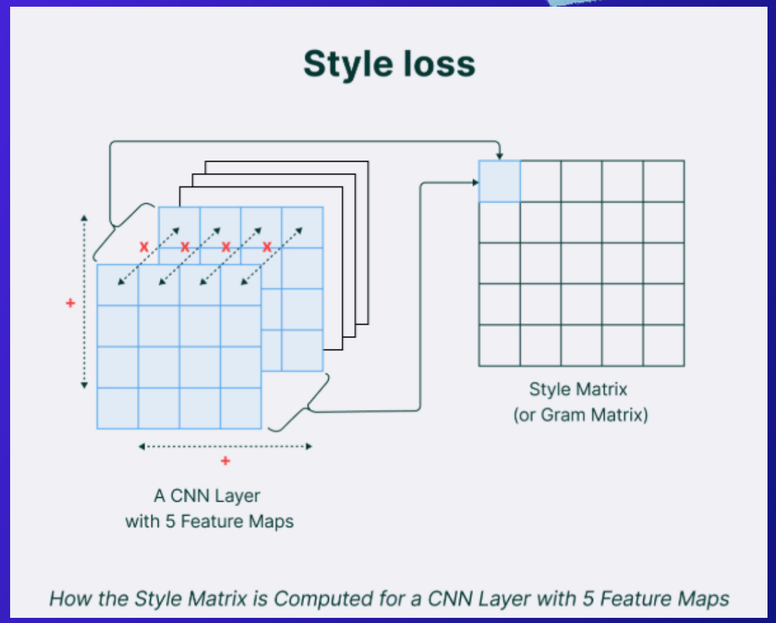
=

KEY APPROACH

HOW NEURAL STYLE TRANSFER WORKS ?







Reference Image - https://www.v7labs.com/blog/neural-style-transfer

AUTOMATION PROCESS

01

Load Pre-Trained Model

We use Google’s Magenta Arbitrary Image Stylization v1-256 model via TensorFlow Hub.

02

Upload Images

Content Image → The base image (e.g., a landscape or a portrait).

Style Image → An image with the desired artistic texture (e.g., Van Gogh's Starry Night).

03

Apply Style Transfer

We pass both images to the model and blend them based on user-defined strength:

0.0 → Mostly content
1.0 → Fully styled

04

Display & Download Stylized Image

Render result using matplotlib

Allow saving via PIL + Colab's file download

REFERENCES

V7 Labs: = https://www.v7labs.com/blog/neural-style-transfer

Tensorflow: = https://www.tensorflow.org/tutorials/generative/style_transfer

Wikipedia: = https://en.wikipedia.org/wiki/Neural_style_transfer

Kaggle: = https://www.kaggle.com/code/diaaessam/art-generation-with-neural-style-transfer

Gatys et al. (2016): = https://www.kaggle.com/code/diaaessam/art-generation-with-neural-style-transfer

THANK YOU