Image transformation with multi-artistic styles

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1 Introduction

The project merges 2 artistic styles and selected background content into one consolidated image based on the architecture proposed by Gatys et al. (2015), which also serves as a benchmark for multi-artistic styles transformation. To be more specific about the method, I use layers in the pretrained 16 layers of VGG Network on the ImageNet dataset to train the content image, and style images respectively. Content of an image was represented by feature response at high layers of convolutional neural network. Gram matrix is to capture the covariance and correlation among pixel patterns. When minimizing weighted layer's loss functions, I add a regularization of total variation to balance the output graph's pixels for a better visualization.

2 Texture Synthesis Extraction

Figure 1: Style image 1

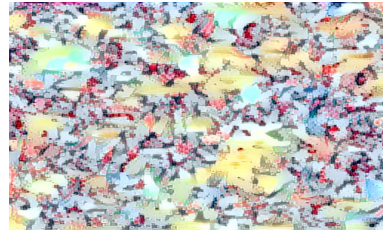Figure 2: Texture Synthesis

Figure 3: Style image 1

Figure 4: Texture Synthesis

3 Final Image Stylization

Figure 5: Content image

Figure 6: Final Result