

CS 464 – Introduction to Machine Learning

Project Title: Stylist	Group Name: SKYNET	Group Number: Section 2, Group 5
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Description of Data

We will use Tiny ImageNet [1] dataset to build an image classifier which we will use to generate high level image features from given image. This dataset contains images from 200 different classes and each class has 600 images. We will divide some portion of these images for validation and test. As style images, we will use different kind of images such as famous paintings, sketch images, abstract paintings. We could easily collect them from internet and also from art datasets [2]. Since we will only need content images to learn image features since we are planning to build a style transfer model.

Question and Purpose

We will try to transfer the style of one image to other. We will extract high level features of these style images and combine them with the low level features of the content images to transfer style. We will use several different methods to build a style transfer model. We will be able to transfer style of given image to the input image, that is our main goal. Therefore, we do not need to train a separate model for different styles. We will be able to use any image to use as style image after project is implemented.

Goals

By Progress Report, we will implement the method described in [3], we will build a Convolutional Neural Network classifier and gradient descent optimizer to complete the model that transfers style of the image to other. We will compare the results with the existing methods and measure the performance of ours. By Final Report, we will implement as many methods as possible and optimize the performance of our model during the experience we will gain in the training process. We will review some of the existing techniques [3], [4], [5] to improve the performance of our algorithm.

References

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