Neural Style Transfer on Text
Project Report One

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Abstract

The current state of the project is rather fluid. Having studied current advances in Style Trasfer and recreated Gatys' original model, we are currently studying the feasibility of style transfer on text using a similar method. There are a number of obstacles in this regard, including finding a feasible model for text reconstruction, studying the properties of style in text, and the possibility of connecting these two concepts in an extension of existing style transfer work. This group is currently working on the development of

1 Introduction

The current objective of our work has been to research the viability of a variety of text representation models, and the viability of text reconstruction using these methods. Work has been done in using CNNs and autoencoders for text representation. Currently, the models are still in the process of being implemented, an analysis of their viability for text representation is pending.

2 Methods and Results

At this point in the process, the team is still constructing a number of different models for text representation. Viable candidates include, CNNs, Varaitional Autoencoders, and KATE. Using these, we will study the possiblity of text representation over the next week.

3 Individual Work

Yuji Akimoto Implemented image style transfer with VGG-16 trained on CIFAR-10 data instead of ImageNet data, to see if "content" representations of images would still be general enough. Also implemented (untrained) "Shallow-CNN", a popular convolutional architecture for text classification as described by Yoon Kim[9].

Ryan Butler

Cameron Ibrahim Attempting to implement the KATE autoencoder. Generated vector representations of the Yelp review vocabulary.

Luca Leeser Implemented a variational autoencoder.

4 Further Studies

We intend to study the layer by layer representation of text in our models and intend to implement text reconstruction. From there, we will begin to study style representation of text.

5   References

References

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