Project Proposal

Team Name: Just Add Another Layer
Team Name:
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Generative Adversarial Networks for Automatic Image Colorization

1 Introduction

There exists a large amount of photographs and videos, mainly antique, that lack color. Providing color to these images provides a modern view to these images. For a human, the task of colorizing these black and white photos leaves open room for imagination. While some objects commonly hold the same color (i.e the sky is *usually* blue), many are left to the imagination. For example, given a black and white photo of someone wearing a dark colored shirt, it would be very difficult or near impossible to tell whether that shirt was blue or green. Therefore, given there is not one correct answer, automatic colorization is an ill-posed problem.

2 Approach

Recent advances in deep learning and big data provide us with a good starting point for tackling this problem. We propose to leverage two specific areas to solve this problem. The first is deep Convolutional Neural Networks. Literature has shown[1] that these can be used to provide a *plausible* colorization of a black and white photo. The second is Generative Adversarial Networks (GANs). Recently, GANs have shown very promising results for generating data. We believe the combination of these two methods should provide better results for automatic colorization.

3 Objectives

Given the nature of current research in deep learning, there are many variations in which we can try. While much of the work will overlap as the project progresses, our current plan for task delegation is as follows.

Cameron: 1, 3, etc Jahidul: 2, 4, etc

4 Timeframe

Goals to achieve by certain dates.

5 Evaluations

How we are going to evaluate the results we get.

6 References

[1] https://arxiv.org/pdf/1603.08511.pdf