Object Recognition and text to Image synthesis using Generative Adversarial Deep Neural Nets
CSE 591: Introduction to Deep Learning in Visual Computing
Project Proposal

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***Abstract*—We aim to build an object recognition system based off of the CIFAR-10 dataset [1]**

1. Introduction

Object recognition is a process for identifying a specific object in a digital image or video. Object recognition algorithms rely on matching, learning, or pattern recognition algorithms using appearance-based or feature-based techniques. [2]Important part of any learning process is examining what has been learn and correct the false knowledge .This is how humans progress in their learning process .Our goal is to implement Generative Adversarial Network for better object recognition and extend it to text to image synthesis.

2. Challenges

Intense computation power is required like a GPU computation for 2-3 days to train this model.

3. Literature Survey

In [3] the authors explore various methods to learn features for object detection from Images.
In [4] the authors define a multi-scale inference procedure which is able to produce high-resolution object detections at a low cost by a few network applications.
We are interested in exploring possibilities of deep neural networks in the field of object detection from images, we have identified a dataset [1] which might be of use to us through the course of the project.

References

[1] CIFAR-10-Object Recognition in Images dataset, https://www.kaggle.com/c/cifar-10

[2] Object Recognition in Computer Vision, https://www.mathworks.com/discovery/object-recognition.html

[3] Learning Multiple Layers of Features From Tiny Images, http://www.cs.toronto.edu/~kriz/learning-features-2009-TR.pdf

[4] Deep Neural Nets for Object Detection, https://pdfs.semanticscholar.org/713f/73ce5c3013d9fb796c21b981dc6629af0bd5.pdf

[5] https://arxiv.org/abs/1605.05396