Generative Adversarial Network

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1 Introduction

The point of this project is to make a GAN (Generative Adversarial Network) to generate facial images of people within our age range (18 -22). My friend was conductive a survey that used generated faces, and said it was difficult to find faces within our age range, so this will be used to solve that issue. In reality, I just want to learn how GANs work and build one! :)

2 Task 1: Find Data Set

First, we need to find a data set of images to use. We can choose another set of images if we want since the main purpose here is learning.

3 Task 3: Pre-processing Data Set

Next we need to preprocess the data set. This means make the images correctly size, or augmenting them to get more data, etc.

4 Task 2: Develop Generative Adversarial Network

Now, we built our GAN network!

5 Task 4: Train Network

Train the network!

6 Task 4: Test Network

We need to evaluate our results! What evaluation criterion will we use and why? Do all faces generate equally well? Is our performance good? Could a human

perform better than the discriminator? hmmm... may be fun to make an app to test people's abilities to spot fake images!

7 Task 4: Conclusion

Write a summary of our results and key decision choices made. We have now completed the project once you have hit this stage! That is very exciting! :)

Some key questions might be which faces fail to be generated either often or well. Is this an issue with our data set? I foresee possible diversity issues when trying to obtain a data set. How do we go about dealing with these issues?