

Generating Photorealistic Images of Dogs using Generative Adversarial Networks (GANs)

George Washington University

Columbian College of Arts & Sciences

DATS 6303 Deep Learning

Final Project - Group 7

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Table of Contents

1. Introduction.....	3
a. abc.....	
2. Dataset.....	4
a. Abc.....	
3. Deep Learning Network & Training Algorithm	5
a. Abc.....	
4. Experimental Setup	6
a. Abc.....	
5. Result	7
a. Abc.....	
6. Summary and conclusions	8
a. abc	

References

Appendix

Introduction

(An overview of the project and an outline of the report)

Dataset

(Description of the dataset)

We can refer the following to write this section:

Stanford Dogs Dataset: <http://vision.stanford.edu/aditya86/ImageNetDogs/>

Stanford Dogs Dataset (paper): <http://people.csail.mit.edu/khosla/papers/fgvc2011.pdf>

Generative Dog Images (kaggle)

<https://www.kaggle.com/competitions/generative-dog-images/overview>

Codes to load the Stanford dog data:

https://github.com/zrsmithson/Stanford-dogs/blob/master/data/stanford_dogs_data.py

Training GANs for Dog using PyTorch:

<https://medium.com/@mirjanalisha/training-generative-adversarial-networks-gans-for-dog-using-pytorch-26d15ec73d1b>

Deep learning network and training algorithm

(Provide some background information on the development of the algorithm and include necessary equations and figures)

DCGAN

UNet2D Diffuser

Result

(Describe the results of your experiments, using figures and tables wherever possible. Include all results (including all figures and tables) in the main body of the report, not in appendices. Provide an extrapolation of each figure and table that you include. Your discussions in this section will be the most important part of the report.

Experimental Setup

(Describe how you will use the data to train and test the network. Explain how you will implement the network in the chosen framework and how you will judge the performance. Will you use minibatches? How will you determine the size of the minibatches? How will you assess training parameters (e.g. learning rate)? How will you detect/prevent overfitting and extrapolation?)

Summary and conclusions

(Summarize the results you obtained, explain what you have learned, and suggest improvement that could be made in the future.)

References

(In addition to references used for background information or the written portion, you should provide the links to the website, or GitHub repos you borrowed code from.

Stanford Dogs Dataset: <http://vision.stanford.edu/aditya86/ImageNetDogs/>

Stanford Dogs Dataset (paper): <http://people.csail.mit.edu/khosla/papers/fgvc2011.pdf>

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Appendix

(A separate appendix should contain documented computer listings (code).