ME793 - Assignment 10

Department of Mechanical Engineering, IIT Bombay

Spring 2024

Due Date: 9:30 AM, May 03, 2024, Marks 20

Assignment Date: 9:30 AM, April 15, 2024

Objective and Instructions

1. The objective of this assignment is to learn about GAN.
2. This needs to be performed using Jupyter Notebook or Google Colab Notebook or only.
3. Submit Jupyter Notebook, Jupyter Notebook pdf to Moodle.

Start with Python Notebook "GAN Tutorial" posted on Moodle. This tutorial was explained in an online session on Saturday, April 13.

Q 1. **[5 points]** Run the notebook in its default condition. Save the generated images. Double the epochs and run the notebook as fresh again. For this you should run all the cells from top. Save the generate images. Show the two sets of generated images (default ephocs and double epochs) side-to-side. If you see any difference, mention it in one short sentence. Untidy answer will draw penalty.

Q 2. **[15 points]** Compare the original image (input image) of digit '7' against the generated image of digit '7' (if two '7' digits are generated, you can choose any). Similarly, there will be many types of digit '7' in the input. You can choose any for comparison. Your comparison should be quantitative. You are welcome to use any library for image comparison. There are many! Finally you need to show the image that you used as input image, and the two output images (after running for two different numbers of ephocs as described in the earlier problem) and for each case show the score of comparison or similarity based on your favorite algorithm or library. Your plots and answers should be reported neatly. Untidy answer will draw penalty. Do not forget to write the name of the library and / or algorithm that you use for comparison.

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