

CMPSC 497 - Deep Learning for
Computer Vision: Homework 5

Professor: Huijuan Xu

Due: March 31, 2023 @ 11:59 EST

1 Assignment Details

In homework 5 we will be implementing a Generative Adversarial Network.

2 Generative Adversarial Network (GAN) (100%)

Students will get experience in implementing the generator and discriminator, and learn how GAN is trained. We will closely examine how an image is generated from a noise vector by the generator.

3 Getting Started + Submission

We suggest students complete the networks in Google Colab. If you'd like to complete the assignments in colab, you can visit the colab website and upload the notebook. To use a GPU, set your runtime to include a hardware accelerator. Students may also complete the homework locally with Jupyter, though training your network will be fairly slow on a CPU. Training a GAN with a GPU will take around 40 - 60 minutes.

There will be two files for submission in this homework.

- (1) You will submit your completed ipynb file WITH output cells.
- (2) You also need to submit the fig.png file which is generated in the last cell of the notebook. We recommend you to complete this figure at the very last, after completely training your network.

Note : Please make sure that the submitted ipynb has all the output cells and the completed code.

4. Sample Output

Here are some possible outputs for fig.png :



Please note that these are some sample outputs and your output can be different from these. Don't pay attention to generate the exact same output, but every generated number in fig.png should look like a number.

5. Rubric

Section	Percentage
Generator Architecture	5%
Discriminator Architecture	5%
Loss functions	20%
Training	70%