

ME 343: Quiz 3

Total number of points = 20. Submit your homework using gradescope.

For this quiz, we will use the interactive exercise at <https://poloclub.github.io/ganlab/>. You may want to take screenshots at various times to illustrate your explanations and comments below. Run the tool many times. You will see that the results vary significantly between runs because of the randomness in the algorithm. Make sure you click on the pencil icon next to “Model Overview Graph” (top left of window) in order to change the hyper-parameters of the GAN model and see how they affect convergence and the quality of the generator. You can also choose from different data distributions. Read the explanations below the lab tool to understand how everything works.

1. 5 points. Explain what the manifold for the generator represents. What is it visualizing?
2. 5 points. Explain how the discriminator’s classification map evolves in response to the position of the fake and real samples. Explain how the fake samples move in response to the discriminator’s classification map.
3. 5 points. Why does the discriminator’s map tend to become gray towards the end?
4. 5 points. Using the interactive tool, comment on the concepts of (a) diversity and (b) quality in the fake samples.