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GAN Report

Set of Experiments

I looked online to find existing examples of GAN systems, and compiled my product using a combination of those methods. At first, I tried adding the LeakyReLU activation to my Dense layers. This didn't yield a good result and gave me errors when trying to export my model. After searching online, I found that this was an outdated method and switched to using an independent "relu" activation layer. This gave me much more accurate results. I also tried with 20, 50, and 100 epochs. This turned out not to be enough so I did my final run with 200 epochs. I also tried many different values for the noise vector, but settled on a value of 100. My end result displays recognizable numbers, but they are not perfect like in the example. The main improvements I made for the generator were to add in the "relu" activation layer, as well as 2 additional Dense layers with values 512 and 1024. For the discriminator, I added in the "relu" activation layer, as well as 3 Dropout layers and 2 additional Dense layers. My loss function was the "binary_crossentropy" function.

Special Skills

For special skills, I normalized the inputs of the data. I also used the LeakyReLU which is good for the generator and discriminator. I also added dropouts to the discriminators for the noise in multiple layers.

Visualizations

My generated images and the display of the loss graph can all be seen in the “img” folder of my submission.