

Project 5 - Generative Adversarial Networks (Due 11/09)

Objectives:

The objective of this project is to learn how GAN works through a simple generative task. You also learn how to train a conditional GAN such that you have some level of control over the type of images you generated.

Data set used:

MNIST

Requirements:

- Task 1: Generate MNIST digit images based on DCGAN. The sample code can be found [here](#).
- Task 2: Train a conditional GAN model. Based on the DCGAN code in Task 1, concatenate labels (e.g., class labels) to the input of the generator and discriminator to control the generated images. You need to go through [ConditionalGAN:2014].

Report

- Read [Arjovsky:2017] and [Goodfellow:2014]. Discuss the reasons why the vanilla GAN is unstable. Explain what unstable means in this context. Read [DCGAN:2016] and [ConditionalGAN:2014] and explain how they use different approaches to stabilize GAN. Write the report in less than two pages.