ML Project Task 1 Report
University of Florida
Computer & Information Science Engineering

Project - Task 2-3 Combined Report
GAN and VAE for Handwriting Recognition

1 Network Model Architecture:

1.1 GAN Architecture:

The generator model of the GAN includes one dense layer followed by two convolutional layers.

1.2 VAE Architecture:

The encoder model of the VAE includes two convolutional layers followed by a dense layer.

2 Training Data for the Models:

MINST Dataset

3 Training Results:

3.1 GAN Results:

Figure 1: GAN Result

Figure 2: VAE Result

3.2 VAE Results:

4 Analysis of Results:

4.1 GAN Analysis:

The GAN has not performed well. The reason for this is small training data sample, simple structure of the generator and discriminator nets and the dimensionality of the noise. To improve performance, all the above have to be tuned properly, along with the filter value of the convolutional nets.

4.2 VAE Analysis:

The VAE has not performed well. The reason for this is small training data sample, simple structure of the encoder and the decodser nets and the dimensionality of the latent variable. To improve performance, all the above have to be tuned properly along with the filter value of the convolutional nets.