EXAM PROJECT FOR PML 2022/2023

REPORT

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1 Density modeling

1.1 Implement a convolutional VAE

1.2 Alternative models

1.2.1 PPCA

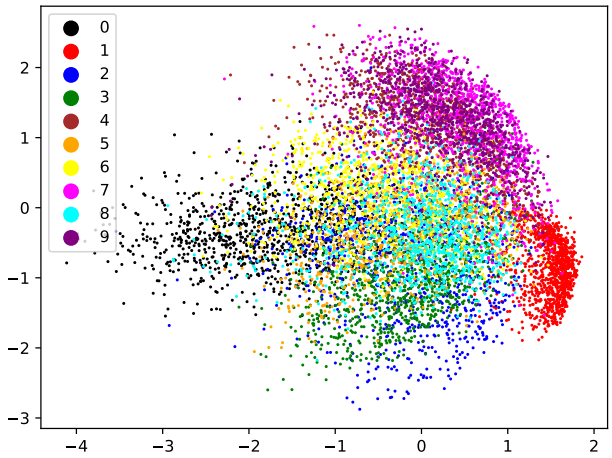

Figure 1: Clustering on MNIST test (projection to latent space) using the trained PPCA model

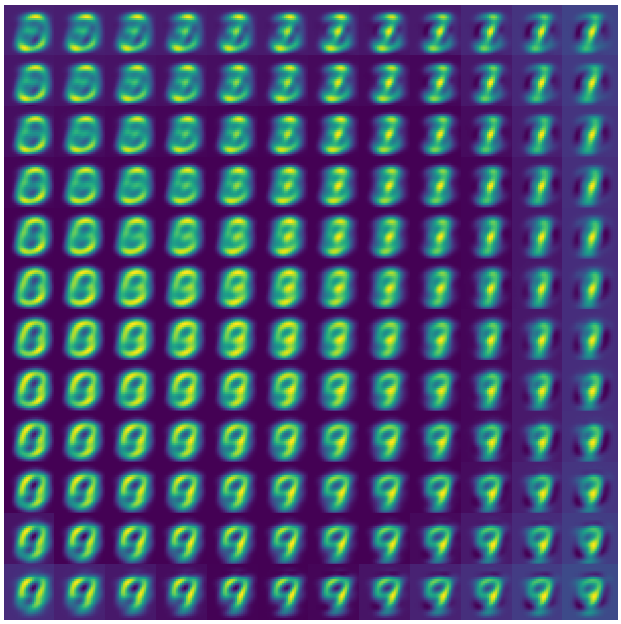

Figure 2: Interpolating images from latent space variables using the trained PPCA model

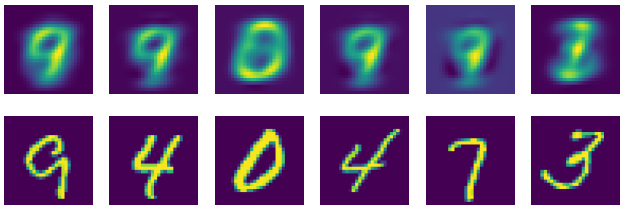

Figure 3: Comparison of MNIST test set images and corresponding mean parameters of the likelihood function in the trained PPCA model

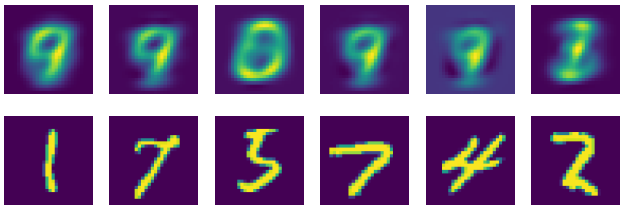

Figure 4: Comparison of MNIST test set images and corresponding reconstructions sampled from the PPCA model

[1] [Bishop and Nasrabadi, 2006]

2 Bibliography

Christopher M Bishop and Nasser M Nasrabadi. *Pattern recognition and machine learning*, volume 4. Springer, 2006.

[1] A test