

Introduction to Deep Learning

Assignment 2: Autoencoders



Course Code: ARI3214-SEM1-A-1920

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Task 1

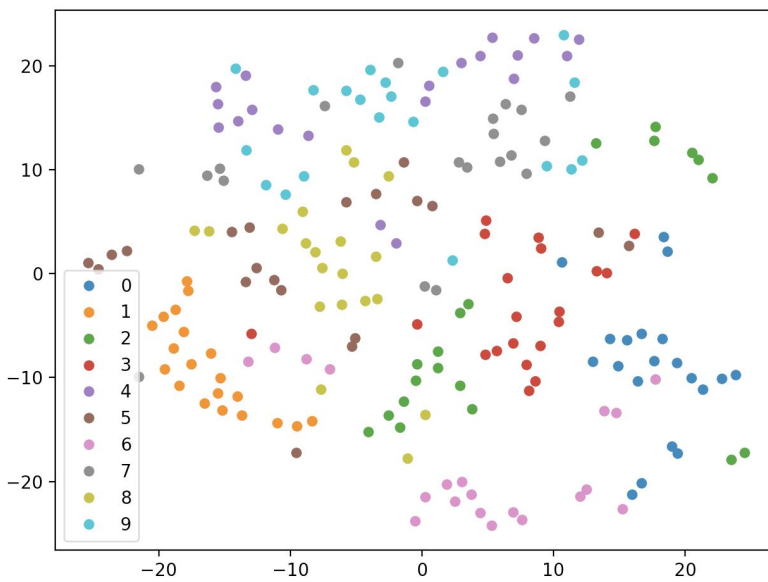
Generated Images



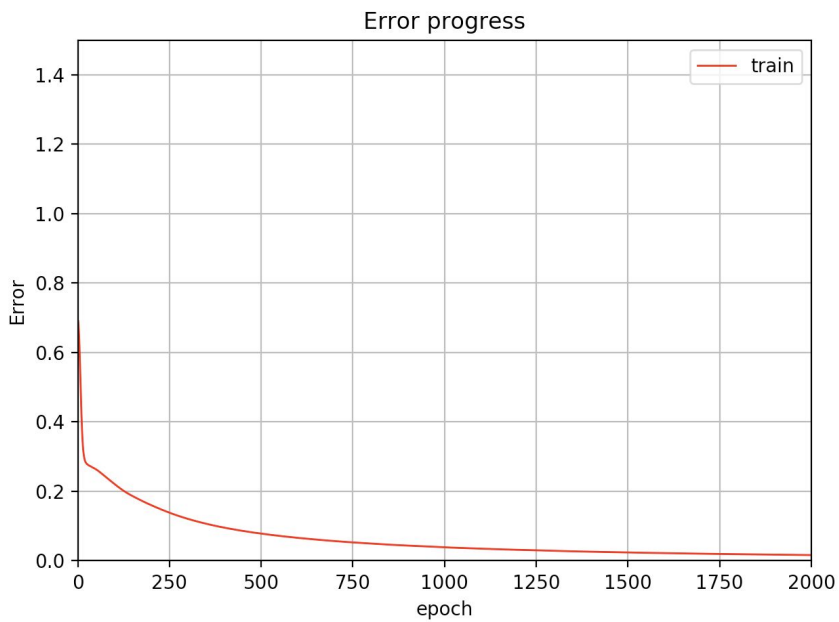
Accuracy: 97.64%
Duration: 1.6min
Params: 402448



Thought Vectors

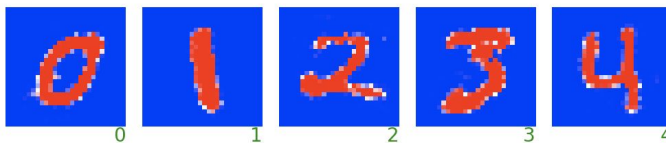


Training Progress

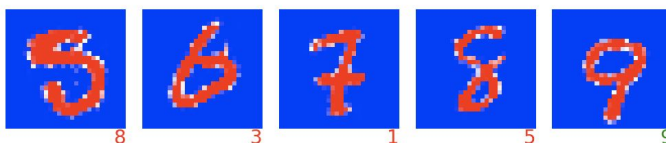


Task 2

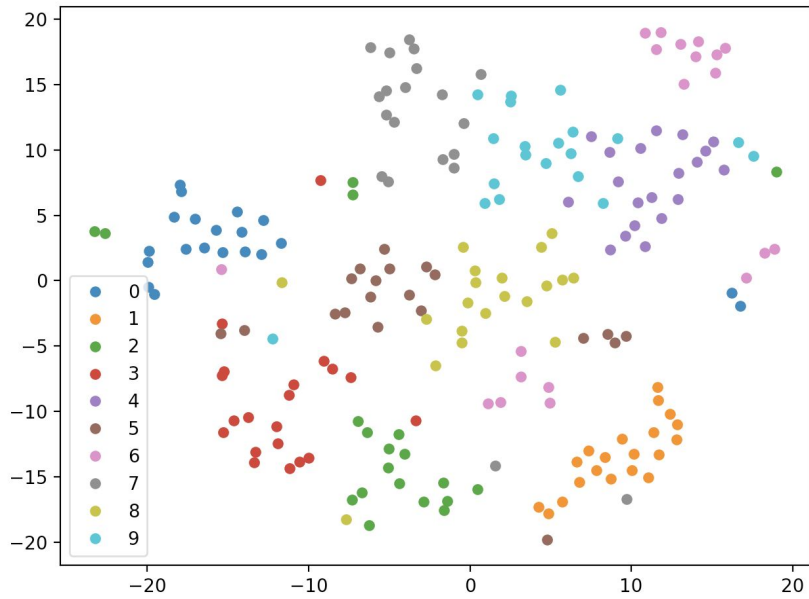
Generated Images



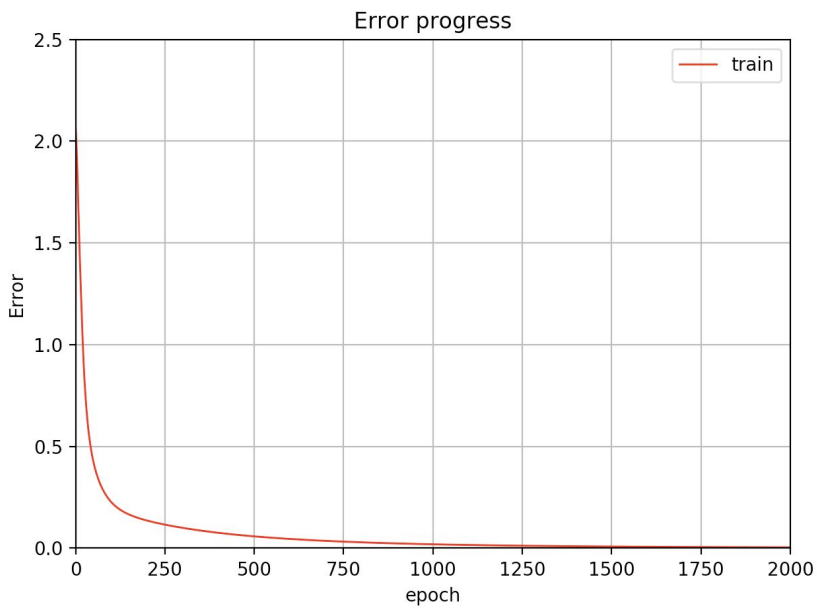
Accuracy: 98.03%
Duration: 1.5min
Params: 405018



Thought Vectors



Training Progress



Observations

- In Task 1, the thought vectors and generated images indicate that the numbers '4' and '9' are similar, this however in Task 2 there seems to be a clearer distinction between the two numbers. The number '7' also appears to be more closely related to '4' and '9' in Task 1 but is far more distinct in Task 2. The thought vectors and generated images in both tasks also show that the numbers '5' and '8' have a similar structure.
- At the start of the task, the generated images of each number was similar. This was due to the fact that the neural network not acquiring enough training. This was fixed by increasing the number of epochs.
- Using the AdamOptimizer adaptive learning rate method improved results significantly.