

Machine Learning



UNIVERSITY OF
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Assignment 2

Prepared By

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1. XOR:

Result for XOR

```
-----  
Model 1  
2 -> 3 -> 1  
Activation Function: Hyperbolic Tangent  
Learning rate: 0.1  
Max Epochs: 1000  
Early stopping: 5  
-----
```

```
Model 1  
Test Accuracy: 1.0  
-----  
-----
```

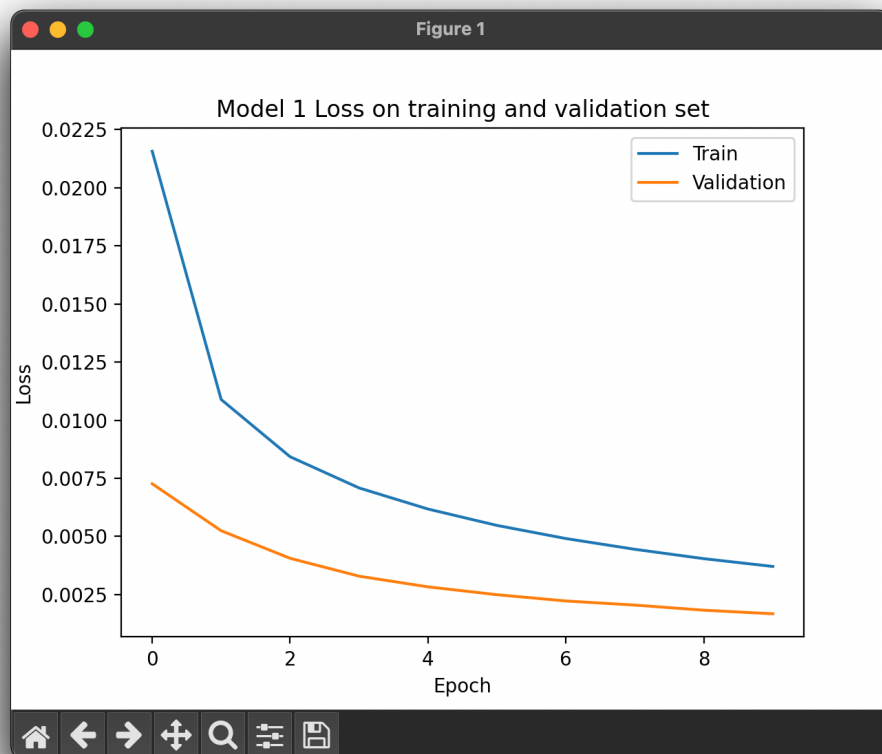
```
Model 2  
2 -> 3 -> 1  
Activation Function: Sigmoid  
Learning rate: 0.1  
Max Epochs: 1000  
Early stopping: 5  
-----
```

```
Model 2  
Test Accuracy: 0.5  
-----
```

2. MNIST :

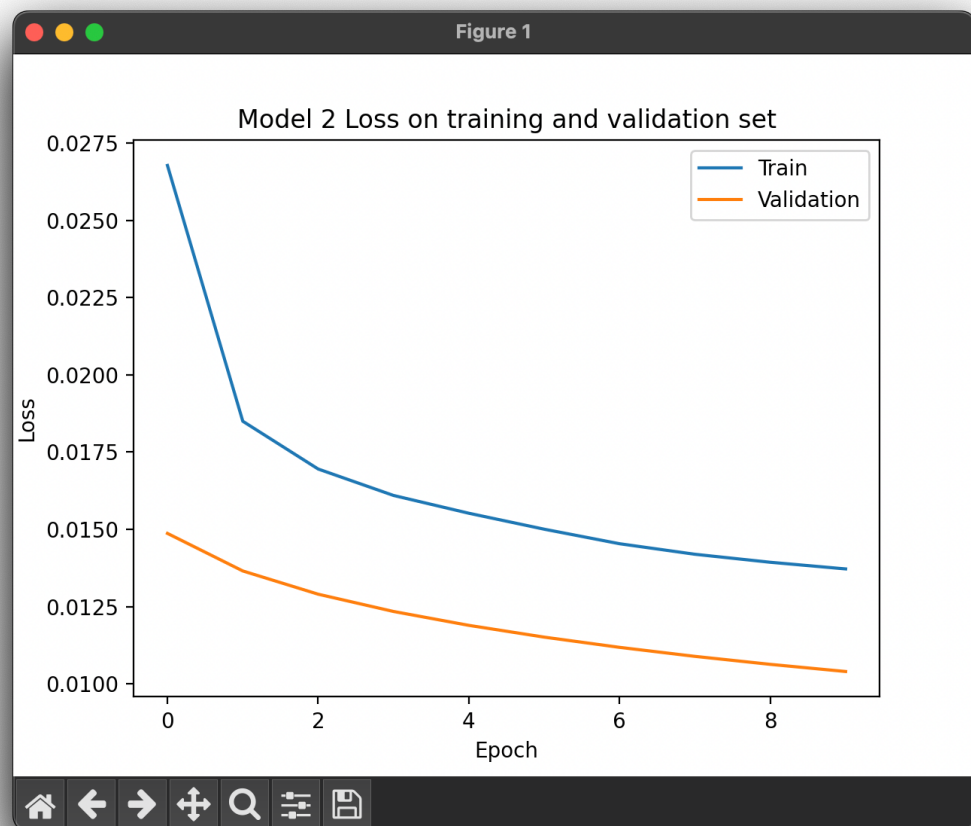
Model 1

```
-----  
Model 1  
784 -> 100 -> 50 -> 10  
Activation Function: Hyperbolic Tangent  
Learning rate: 0.1  
Max Epochs: 10  
Early stopping: 5  
-----  
Model 1 is training on training set  
Model 1 is successfully train on training set  
-----  
Model 1 is training on validation set  
Model 1 is successfully train on validation set  
-----  
Model 1  
Test Accuracy: 96.81  
-----
```



Model 2:

```
-----  
Model 2  
784 -> 50 -> 10  
Activation Function: Hyperbolic Tangent  
Learning rate: 0.1  
Max Epochs: 10  
Early stopping: 5  
-----  
Model 2 is training on training set  
Model 2 is successfully train on training set  
-----  
Model 2 is training on validation set  
Model 2 is successfully train on validation set  
-----  
Model 2  
Test Accuracy: 93.31  
-----
```



Model 3:

```
-----  
Model 3  
784 -> 100 -> 30 -> 10  
Activation Function: Hyperbolic Tangent  
Learning rate: 0.1  
Max Epochs: 10  
Early stopping: 5  
-----  
Model 3 is training on training set  
Model 3 is successfully train on training set  
-----  
Model 3 is training on validation set  
Model 3 is successfully train on validation set  
-----  
Model 3  
Test Accuracy: 97.09  
-----
```

