

# Activity 17 Neural Networks

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## Objective(s)

1. Program a neural network to learn a sine function. Alternatively, you may train the network to learn any function.
2. Program another neural network to classify your fruit data in Activity 13 (Perceptron) [1-3].

## Results

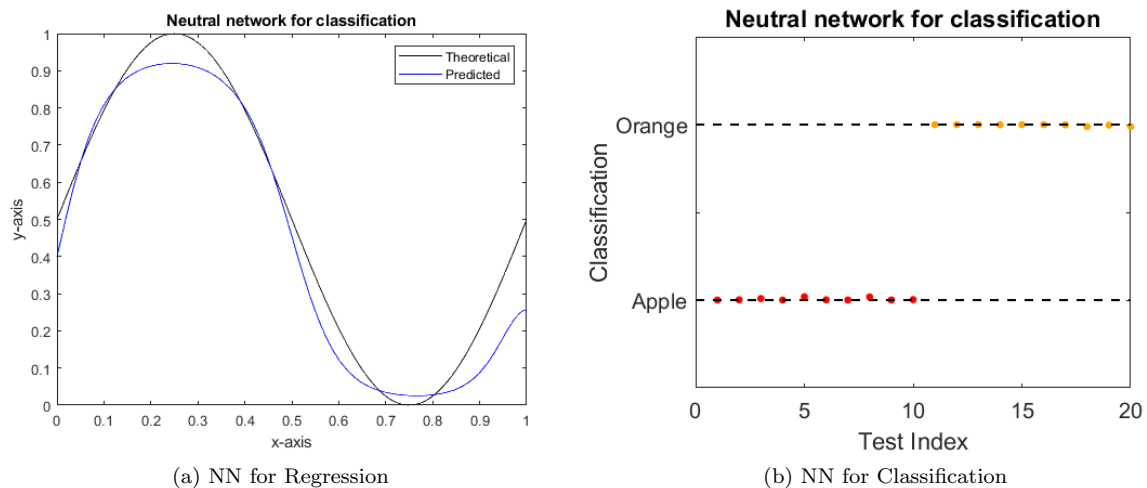


Figure 1: Neural Network Application.

## Comment(s)

**Neural Networks.** Figure 1a shows that the neural network was able to estimate a sine functions with a learning rate of 0.01. Figure 1b shows that the netural network was able to classify the fruit data from the previous preceptron activity. The neural network's efficiency to learn depends on the learning rate may be set to an appropriate value (less than 1.0 ) by trial and error.

## Self-Evaluation

I would rate myself a 10. The objectives for this activity was met such that the weights  $\mathbf{w}$  and bias  $w_0$  were successfully calculated and adjusted. The neural network was successful for regression and classification [4].

## References

- [1] M. Soriano, A17 - neural networks 2019.pdf.
- [2] C. M. Bishop, Neural networks and their application chris bishop.pdf.
- [3] M. Soriano, Machine learning intro.pdf.
- [4] M. Soriano, A13 - perceptron.pdf.