

Homework 1:

Write a computer program using an MLP NN to approximate the nonlinear function $y = e^{-x} \cos(3x)$ in the interval $[0,4]$. The training data was sampled with 21 points separated by 0.2. To test the network's generalization capability, the same interval was sampled with 401 points separated by 0.01.

Homework 2:

Write a computer program using an MLP NN to classify the digits (0-9) given below. The number of neurons in the output layer should be equal to the number of digits. Each of the digits is represented as a 9x4 matrix of binary numbers. The input training patterns can be generated from each digit as a vector resulting from applying the vector operator to each matrix representing the digit. After the network is trained, introduce random noise into the digit representations, and test the performance of the neural network. Experiment with different activation function in the output layer.

