Neural Networks

The first task is to read Chapter 5 in Pattern Recognition and Machine Learning book by C. Bishop. You will then implement your own framework for training and testing neural networks.

First, the training of the weights will be implemented by employing random weight initialization trick (slide 41). The approach is called extreme learning machine and more information can be found here: https://en.wikipedia.org/wiki/Extreme\_learning\_machine

Once you have implemented neural networks based on random weight initialization, use your framework to reproduce graphs in Fig. 5.3 in Pattern Recognition and Machine Learning book. Use all the parameters for the neural networks as used to generate graphs in Fig. 5.3. This means use same activation function and number of hidden nodes and layers. Once you have completed the task, employ backpropagation algorithms to train neural networks and reproduce graphs in Fig. 5.3.