# Homework 8

## Writing Assignment

1. Is deeper better in Deep Learning? Can you give some examples/researches/experimental results to support or oppose to "deep"? What parameters/designs/structures should be carefully concerned to obtain high performance in Deep Learning?

2. Try to design a feedforward neural network to solve the XOR problem. The feedforward neural network is required to have two hidden neurons and one output neuron, and uses ReLU as the activation function.

3. Dropout is a regularization method that approximates training a large number of neural networks with different architectures in parallel. During training, some neurons are randomly dropped out. In Figure 1, the neurons that marked with a red cross will be dropped out during training. For simplication, the bias of neuron is 0 and omitted in Figure 1. Assume dropout rate is 0.25. This network uses ReLU as the activation function.

   a. What are the values of outputs y1, y2 during training?

   b. What are the values of outputs y1, y2 during testing?

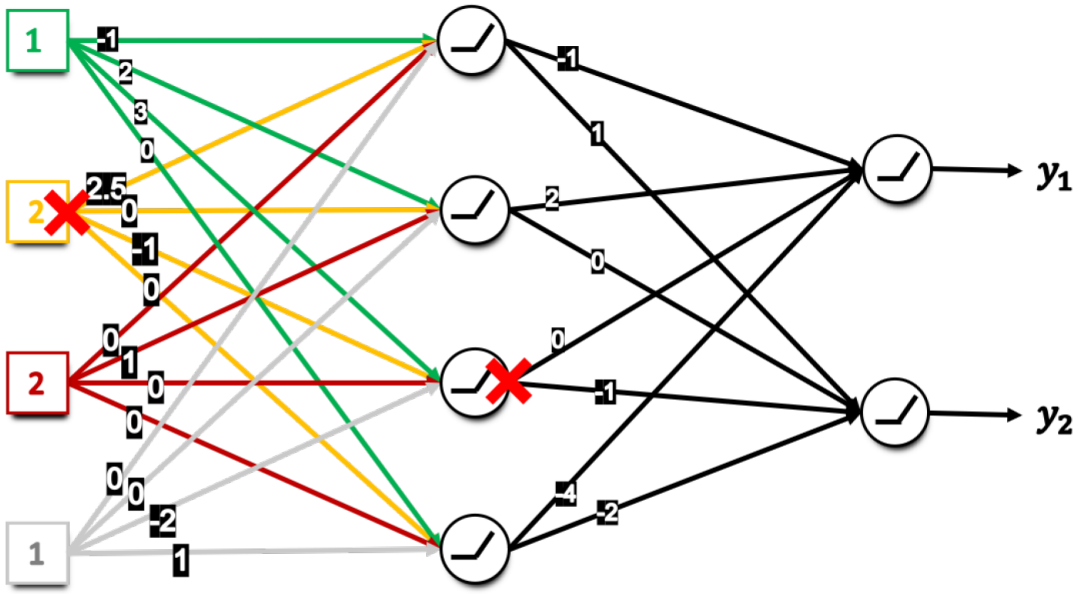


Figure 1: Feedforward neural network.

## 1 Due

1. Due is Nov. 22th, 23:59.

2. Submit a PDF on the canvas.