

Introduction to Neural Networks

Homework #1

Due Date: 10/12/2016

Problem Statement:

Problem 1: Function Approximation

You are asked to derive learning rules for a multi-input-multi-output (MIMO) feedforward neural network with the backpropagation learning algorithm (FNNBP) for function approximation. The network structure is as follows:

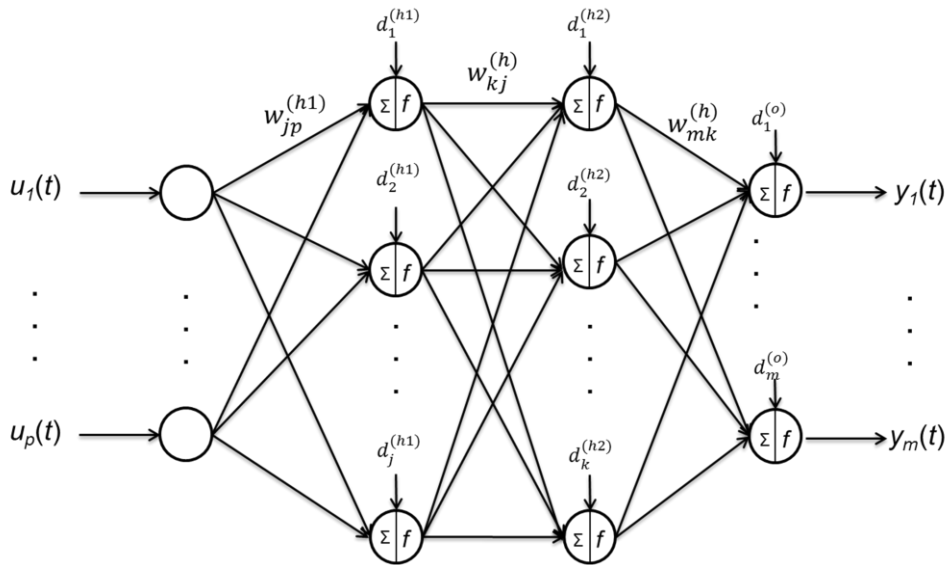


Fig. 1. Structure of three-layer feedforward neural network.

Use 'sigmoid' for the activation functions in the first hidden layer, and 'hyperbolic tangent' in the second layer, and the output the same as the integration of the neurons. Derive the parameter update rules for all the parameters.