ANN Assignment

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1 Question

Assignment (Artificial Neural Networks)

A medical dataset along with its description is attached. The main idea of this data set is to prepare the algorithm of the expert-system, which will perform the presumptive diagnosis of two diseases of urinary system.

Build the above expert system using an artificial neural network using only the Numpy library and implement the following:

1. Label encode the different categorical features using binary identifiers [1,0].

2. Fix the number of hidden layers to just 1; use sigmoid activation for this hidden layer. Also set the number of nodes in the hidden layer to 7.

3. Perform the forward and backward pass and report the weight matrices for first three iterations.

4. Finally train the model for 50 epochs and report the accuracy of the model on the test set.

5. Repeat the above steps for two hidden layers with 5 and 10 nodes respectively; for the two hidden layers use linear and sigmoid activation in the same order.