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Course: Application Programming in MATLAB Environment 2002

Exercises 13 & 14

Testing MLP for classification and realizing and testing weight decay -technique!

Problem 1

Let us consider a simple test case of classification.

Generate two classes of features using the following MATLAB commands:

```
n0 = 2; N = 6; x1 = randn(N,n0); x2 = x1+1.e0;
```

Build and train an MLP-classifier using this learning data and illustrate the obtained result in a suitable way.

Problem 2

Realize the weight decay -technique for MLP learning/training corresponding to formula (5.49) in lecture notes. Test the effect of different values of β for the sin-function approximation problem of the previous exercises.

Problem 3

Study the components of the hidden matrix $\mathbf{W}^{1*}$ corresponding to both function approximation and classification applications using the solution of Problem 4 in Exercises 3 & 4. Can you use this visual information for determining an appropriate size of the hidden layer?