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Course: Application Programming in MATLAB Environment 2002

Exercises 11 & 12

Improving the performance of MLP training!

Problem 1

Enhance the solution of **Problem 3** from the previous exercises by changing the MLP cost function and derivative matrix computations to the matrix form

(Cost function without the for-loop-routines in Erkki's page).

Test the correctness of this implementation by

- using the `DerivativeCheck`-option in `fminunc`
- comparing the resulting networks (i.e., weight matrices) obtained using this and the previous approach to each other
(NOTICE: remember to start the optimization from the same initial weights!)

Problem 2

Make a step-by-step MEX/C-implementation of cost function and gradient matrix computation for two-layered MLP using

- random testing of the correctness of the realized c-routines
- timing of the realized c-routines to study the efficiency of the implementation

Use (and further test) the resulting routines for **Problem 1**.