T. Kärkkäinen
Course: Application Programming in MATLAB Environment 2000

About the seminar work

This course includes an obligatory seminar work needing 20–40 hours of work individually. Topic of the work can be self-invented or from the list below, but it must be related to MATLAB and should be agreed with the lecturer. Working group for one specific topic can consist of one or two students.

There will be approximately ten weeks time for preparing the seminar work (including the Christmas time when every hard-working student will have, at most, one week holiday ;-). Differently from what was said in the first lecture, there will be only one time and place for tutoring: **Monday 10–12 Ag B113.1**. Extra tutorial times must be agreed with either TK (room Ag C412.1, email: `tka@mit`) or EH (room Ag C424.1, email: `emsh@mit`).

The documentation of the seminar work is a 5–10 pages written report containing, at least, the initial topic, possibly used data, methods used and/or developed and/or applied, and the results obtained. Also the macros and programs must be included in the final report as an appendix. An essential feature of the work should be illustration and visualization of different things using MATLAB's graphical tools.

On week 9, friday 2.3.2001 10–16 Ag C133.1 we will have a closing seminar of the course where all the seminar works will be presented to the others. The final evaluation and corrections of the presented works will be made one week before this seminar, so that all the works should be ready to be delivered to tutors during week 8, 2001.

All students which present their seminar work on the seminar will obtain four credit points to the first final examination which they attend after the seminar. Let us recall that this work is obligatory, so that those of the students who want to pass this course without a presentation must, anyway, finish the seminar work, but then there will be no additional credits given.

Basic topic: Train the MLP-network to solve an suitable application arising from some learning data. You can either pick up the data, for example, from the web, or generate it by yourself.

Robust MLP: Implementation of an algorithm for training the MLP-network, where the learning problem formulation is based on the so-called L^1-fitting.

Clustering: Implementation of an algorithm for clustering given data. Building GUI for such applications.

GUI revisited: Build a more comprehensive GUI for the MLP-network.

SIMULINK **revisited:** Build a SIMULINK model to simulate some dynamical system.

Free topic: A topic of your choice that is related to MATLAB.