EN2202 Pattern Recognition 7.5 credits

Mönsterigenkänning

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for EN2202 valid from Autumn 2010

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

For single course students: 120 credits and documented proficiency in English B or equivalent

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The participants shall after the course be able to

* design systems and algorithms for pattern recognition (signal classification), with focus on sequences of patterns that are analyzed using, e.g., hidden Markov models (HMM),

* analyse classification problems probabilistically and estimate classifier performance,

* understand and analyse methods for automatic training of classification systems,

* apply Maximum-likelihood parameter estimation in relatively complex probabilistic models, such as mixture density models and hidden Markov models,

* understand the principles of Bayesian parameter estimation and apply them in relatively simple probabilistic models.

Course contents

The course is about the theoretical foundation of pattern recognition and gives an introduction to technical applications, especially in speech recognition and image or sound classification.

Disposition

Lectures (24h), tutorials (24h), and project homework.

Course literature

Arne Leijon (20xx) Pattern Recognition. KTH. (latest version)

Examination

- INL1 - Home Work, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 5.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Written exam and compulsory Homework Assignment including Matlab implementation of classifier tools.

Other requirements for final grade

Exam 5p (grade A-F). Homework Assignment 2.5p (A-F). The final grade is a weighted sum of graded performance on the Exam and Homework Assignment, with weight 25 for the exam and 10 for the Homework Assignment.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.