FDD3013 Sum of Squares and Integer Programming Relaxations 6.0 credits

Summan av kvadrater och heltalsprogrammeringslättnader

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

Establishment

Course syllabus for FDD3013 valid from Autumn 2014

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Knowledge in theoretical computer science corresponding to DD1352 Algorithms, data structures and complexity or DD2352 Algorithms and complexity is required.

Language of instruction

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

Intended learning outcomes

On completion of the course, the students should be able to

- read conference papers within the field of the course
- present linear and positive semi-definite relaxations of linear programs and how these can be used in approximation algorithms
- show lower borders for the sum of squares system and present the limitations of the method.

Course contents

Integer programming relaxation hierarchies.

The sum of squares system.

Algorithms employing such relaxations.

Lower bounds for sums of squares.

Disposition

Lectures and written assignments.

Course literature

See description on the course web.

Examination

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.

Other requirements for final grade

Pass the problem sets and lecture notes.

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.