PhD student - NP-hard optimization problems.

KTH The School of Computer Science and Communication (CSC) seeks a PhD student with a focus on the approximability of NP-hard optimization problems.

KTH is the largest technical university in Sweden. Education and research cover a broad spectrum within natural sciences and engineering, as well as architecture, industrial engineering and management, urban planning, work science and environmental engineering. There are circa 12,000 full-year undergraduate students, 1,400 postgraduate students and 3,100 employees.

CSC is one of Sweden's most advanced and successful research and education institutions in Information Technology at KTH and Stockholm University.
The activities of the school focus on higher education and research within the traditional core areas of numerical analysis and computer science; from theory building and analysis of mathematical models to algorithm construction, implementation and simulation. The applied research includes areas like scientific computing, computer vision, robotics, and neural networks, as well as human-computer interaction, media technology, and communication through speech, language and music. More information: www.kth.se/csc, go to "CSC International Website"

The Division of Theoretical Computer Science offers a strong research environment including 4 full professors and encompasses a wide spectrum of areas within the theoretical aspects of computer science.

The goal of the current project is to show mathematical theorems relating to efficient computation. In more detail the project studies NP-hard combinatorial optimization problems of central importance and aims to establish theoretical bounds on how well each problem can be approximated in polynomial time. The goal is to prove upper bounds by designing and analyzing algorithms and to prove lower bounds in the form of hardness results. A more detailed description of the project can be found at http://www.csc.kth.se/tcs/projects/approx.php.

This is a four-year, time-limited position and normally includes 20% departmental duties, usually teaching. Research students must be registered at KTH. The salary follows the guidelines provided by KTH. The starting date is open for discussion, though ideally we would like the successful candidate to start as soon as possible.

Qualifications

The candidate should have a strong background within mathematics combined with a good understanding of efficient computation.

Applicants must be strongly motivated for doctoral studies, possess the ability to work independently and perform critical analysis as well as possessing good levels of cooperative and communicative abilities.

KTH aims to employ a diversity of talent and thus welcomes applicants who will add to the variety of the University, especially as concerns its gender structure.

Employment

Form of employment: Time-limited
Start date: According to agreement

Application

Application deadline: February 15, 2010
Employer's reference number: D-2010-0004

Applications via email to: susanneb@csc.kth.se Write reference number in the email subject. (CV, etc should be sent as an attachment preferably pdf-files.)

Alternatively applications by ordinary post to be sent to:
CSC att. Susanne Bergman, KTH, Lindstedtsvägen 3, plan 4, SE-100 44 Stockholm, Sweden.

Application shall include the following documents:

1. Curriculum vitae.
2. Transcripts from university/university college.
3. Brief description of why the applicant wishes to become a doctoral student.

The application should be written in Swedish or English.

Contact(s)
Queries concerning PhD studies at KTH can be directed to:
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Queries concerning the project content can be directed to:
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