

Graduate student in Complexity theory

1 Research Area

The position is within complexity theory with a focus on questions concerning approximation algorithms and subexponential time algorithms. These might be based on linear or semidefinite programming to solve hard combinatorial problems. Of special interest is also the sum of squares methodology. These algorithmic approaches are complemented by hardness results that show that certain problems do not admit efficient algorithms. These can either be based on the standard assumption that NP is different from P but hardness results based on the unique games conjecture will also be studied. The project includes more general questions about efficient computation. The aim is to prove mathematical theorems about efficient computation and the algorithms analyzed will in general not be implemented.

2 People involved

The project is headed by Johan Håstad and co-PI is Per Austrin. We have three graduate students involved in the project and we are also looking to involve a post-doc. The project is sponsored by a grant from the Knut and Alice Wallenberg Foundation.

3 Practical details

The deadline for applications is April 23. Please visit the KTH portal to apply. This link is to the formal ad.

The subject area of the position can be in “Mathematics” or “Computational and Applied Mathematics” depending on the background of the accepted candidate.