ORAL DEFENSE ANNOUNCEMENT

Nikolay Gravin

Incentive Compatible Design of Reverse Auctions

Abstract:
We consider two classes of optimization problems that emerge in the set up of the reverse auctions (a.k.a. procurement auctions). Unlike the standard optimization taking place for a commonly known input, we assume that every individual submits his piece of the input and may misreport his data or not follow the protocol, in order to gain a better outcome. The study of scenarios falling into this framework has been well motivated by rapidly growing industries such as sponsored-search ad-auctions, on-line auction services for consumer-to-consumer sales, marketing in social networks, etc. Our work contributes to the field of algorithmic mechanism design, which seeks to obtain nearly optimal algorithms and protocols that are robust against strategic manipulations of selfish participants.

The first part of this thesis is devoted to the problem of payment minimization under feasibility constraints overlaid on top of an underlying combinatorial structure of the outcome. In the second part of this thesis we study procurement auctions in which sellers have private costs to supply their items and the auctioneer aims to maximize the value of a purchased item bundle, while keeping payments under a budget constraint.

Date: 29th May 2013 (Wednesday)
Time: 3.00pm – 4.30pm
Venue: MAS Executive Classroom 1 (MAS-03-06)
Supervisor: Dr Dmitrii V Pasechnik