



Contribution ID: 230

Type: **Invited talk (plenary/keynote)**

Computational Intelligence and Algorithmic Mechanism Design: an Application in Revenue Optimisation

Monday, 4 December 2017 13:30 (30 minutes)

Mechanism Design lies in the area of game theory, with aims to design games whose equilibria have desired objectives such as high efficiency or revenue optimisation. Algorithmic Mechanism Design focuses on Mechanism Design in algorithmically-complex scenarios, and it employs various analytics tools with considerations on computational constraints that exist in polynomial time. What makes this area more challenging is the trade-off between computational constraints and game-theoretic constraints. This talk will present this challenge, through a simple case study in the application of revenue optimisation in the area of auctions. A number of issues such as the computational hardness; convexity and a Vickrey–Clarke–Groves (VCG) mechanism, which is a generic truthful mechanism for achieving a socially-optimal solution, will be presented. The convergence of the challenges and the need for High Performance Computing environment will also be presented. The talk will end by discussing the current state of the field and how mechanism design is applied in computational settings, the challenges for further research.

HPC content

Not included

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Session Classification: Cognitive Computing and Machine Learning

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