



**Politecnico  
di Torino**

Dipartimento di Scienze  
Matematiche "G. L. Lagrange"



Tuesday **November 29** at 16:30

Hosted on: [Zoom](#)

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# **On the use of information in coordinating self-interested agents**

Prof. Como introduces the seminar.

### **Abstract**

This two-part talk discusses the role/use of information in coordinating a group of self-interested agents. Pricing schemes have emerged as the standard tool to control the behavior of such agents. By controlling the price associated with the agents' actions, a regulator can ensure that certain decisions will be adopted whereas others are avoided. However, pricing mechanisms require enforcing mandates where agents fully/obediently follow the regulator's signal. The first part of the talk explores the possibility to deviate from such hypotheses and take the users' autonomy into account. The idea, inspired by the notion of nudge in behavioral economics, is to pose suggestions and provide information about the choices that the agents make and their likely costs. The aim of the method is to respect the free will of the users while gently steering them toward a socially favorable outcome. The second part of the talk is devoted to coordinating players in network games by applying static as well as dynamic interventions. The aim of the interventions is to relocate the nominal Nash equilibrium of the game to a point which is more favorable for the entire group as a whole.

As will be observed, the nature of the available knowledge on the network game is crucial in deciding the choice of the intervention protocol. Depending on the available information, the intervention policy ranges from open-loop and static algorithms to dynamic and adaptive interventions. We conclude the talk by a few remarks on open problems.

### **Biography**

Nima Monshizadeh received his Ph.D. degree with honors (cum laude) from the Johann Bernoulli Institute for Mathematics and Computer Science, University of Groningen, The Netherlands. He was a Research Associate with the Control Group of the University of Cambridge, before taking a tenure track position at the University of Groningen in 2018. He was a visiting scholar at UCLA, Los Angeles, (Fall 2018). He is an associate editor of *Automatica* (2020- present) and a member of the IEEE Conference Editorial Board (2020-present). His research interests include optimization and control of complex networks, privacy, and power systems.