



## Call for Participation

# Tutorial on Decision Making in Extended Multiagent Interactions

Choosing optimally among different lines of actions is a key aspect of autonomy in agents. The process by which an agent arrives at this choice is complex, particularly in environments shared with other agents.

This *half-day* tutorial will focus on how to make optimal and approximately optimal decisions in multiagent settings. The tutorial will utilize the well-studied domain of search and human support applications to motivate and provide context for a range of multiagent interactions of increasing generality.

The focus of this tutorial will be on decision-making in time extended interactions, which are often encountered in search and human support applications. The tutorial will adopt a unique pedagogical style, utilizing several classroom games to generate intuition and reinforce instruction.

The tutorial will be self-contained, introducing relevant background literature such as aspects of game theory.

REGISTER AT

[HTTP://GAIPS.INESC-ID.PT/AAMAS2008/REGISTRATION.HTML](http://gaips.inesc-id.pt/aamas2008/registration.html)

Organizers:

Prashant Doshi, Zinovi Rabinovich

### Topics

- Requirements for the multiagent decision model and solution control (Multi-agent EMT)
- Game theory background
- Repeated strategic and Bayesian games
- Iterative solution methods (e.g. fictitious play)
- Multi-agent stochastic (Markov) games
- Decentralised Markov decision processes (DEC-MDPs)
- Model specializations
- Partially observable stochastic games (POSGs)
- Stigmergic solution with perceptual control (Multi-agent EMT)
- Partially observable Dec-MDPs (DEC-POMDPs)
- Interactive POMDPs (I-POMDPs)