**Boston University** College of Engineering
Department of Electrical & Computer Engineering

# Game-Theoretic Design for Networked Communities

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## Monday, January 30, 2012
## 4 P.M.
## 8 Saint Mary's St., Room 339
*Refreshments will be served outside Room 339 at 3:45 p.m.*

## Faculty Host: Bobak Nazer

This talk proposes a new generation of ideas and technologies for designing the interactions between self-interested learning agents in networked communities (social networks, service networks, online labor markets, crowdsourcing, P2P networks). When the communities are composed of compliant machines (wireless nodes, routers, mobile phones, etc.), network utility maximization (NUM) and other well-known control and optimization methods can be used to achieve efficient designs. When the communities are composed of intelligent and self-interested agents (people or smart software agents acting on their behalf), such methods are not effective, and efficiency is much more difficult to achieve because the interests of the individual agents may be in conflict with that of the network designer. This talk describes design principles to achieve efficient outcomes in such networks based on the use of incentives (rewards and punishments). Depending on the characteristics of the network, the community, and the capacity of the designer, the application of these principles may be through any of a number of various mechanisms. This talk discusses mechanisms based on indirect reciprocation (social norms and token exchanges).

# ECE Colloquium Series

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