CSS-TW1
Cooperation in Selfish Systems incorporating TagWorld I

Welcome!

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- Many systems function via cooperation between subunits
    - Without centralised control and enforcement
    - When subunits act "selfishly" for their own ends
    - When subunits sometimes have conflicting goals

- Examples include (aspects of):
    - Biological systems
    - Human social systems
    - Increasingly: distributed information systems

- Basic questions:
    - What kinds of theories, tools and analysis can help us to understand and engineer cooperation
    - Specifically, can bio- and socio-inspired ideas be imported into engineering practice?

- Convergence between open problems in:
    - Distributed information systems
    - Biological and social sciences

- Convergence in techniques:
    - Complex Systems viewpoint
    - Computer simulation (agent-based)
    - Evolutionary approaches

- Increase emphasis on:
    - Non-equilibrium analysis
    - Bounded rather than classical rationality
    - Local interactions -> emergent global properties
    - Self-Organisation

- Increasing need for robust, self-organising, cooperative behaviour over unreliable and non-centralised infrastructures such as the Internet.

- New technologies widely deployed and used:
  - P2P (BitTorrent, Skype, edonkey)
  - Grid Systems
  - Mobile ad hoc wireless networks

- Understanding how to "engineer" self-organising cooperative systems is now a "hot topic"

- But is it a passing fad?

- Many workshops and conferences list this issue as a topic of interest in their long lists of topics but:
    - The bio- and socio- orientated community tend to focus on highly general models (simple topologies, games, replicator dynamics)
    - The distributed systems community tend to focus on specific application areas (non-general, poor theory, ah hoc)
- Here we wish to focus on *both* general approaches / theory but also (with an eye to) applications
- The "Holy Grail" would be highly general theories applicable to many specific applications

- Foster collaboration and cooperation between different groups

- It is highly likely that this area will be directly addressed by various future European funding initiatives (FP7 IST) => possible future consortia

- Many here are PhD students working in similar areas => highly useful to make contact

- Have fun

- Drink wine

DELIS

Dynamically Evolving, Large-scale Information Systems

- Today:
  - General cooperation in selfish systems approaches
  - PhD student session (@5:30pm)

- Tomorrow:
  - More specific "tag" inspired approaches "Tagworld 1"
  - Work in progress session after lunch (@3pm)
  - Open problems and challenges session (@4pm)

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