

## Some Final Project Topics

- games
  - o repeated:
    - axelrod PD literature
  - o equilibrium
    - survey alternatives to Nash; see how they work out in play
    - sequence form representation of large extensive form games
    - imperfect recall
  - o what is equivalence between games? What is a good distribution over games?
  - o interesting classes of games
    - supermodular
    - congestion/potential
  - o compact
    - graphical games
    - MAIDs
    - LEGs
- bounded rationality
  - o What is the effect of agents with limited look-ahead in games
  - o Contrast finite-state automaton model with another model
  - o Relate to human play in experimental games
- voting
  - o compare different schemes
  - o use complexity to discourage manipulation
- advanced mechanism design
  - o possibility results other than VCG
  - o contracts/bargaining/exchange
- single-item auctions
  - o collusion
  - o non-private value valuations
- combinatorial auctions
  - o network problems (price of anarchy, etc.)
  - o restrictions on strategy space and effect on incentives, computation
    - e.g., approximation by the auctioneer that preserves incentive compatibility
  - o online algorithms
  - o ascending/iterative mechanisms
  - o false-name bidding
  - o bidding languages
  - o see the deVries/Vohra survey
- networks
  - o price of anarchy
  - o alleviating congestion through pricing
- distributed problems
  - o distributed constraint satisfaction
  - o algorithmic mechanism design
  - o market-oriented programming
- multiagent learning
  - o cooperative settings
  - o purely competitive settings
  - o various solution concepts (Nash, correlated, maxmin, etc.)
  - o stochastic games
  - o what should the approach be anyway?