Mutable Teams of intelligent missiles: Investigating how to maintain team knowledge when agents’ lifetime is much smaller than the team’s lifetime.


Emotional Agents vs. Rational Agents in a Competitive Setting. Teams of emotional and deliberative robots compete to gather hockey pucks.

Market-based team formation in distributed sensor networks, based on work by Victor Lesser at UMASS.

Boundary Tracking with an Underwater Sensor Network. Sensors coordinate to decide which ones will stay underwater to track underwater targets, and which ones will rise to the surface of the water to recharge via solar energy. Based on RMTDP work in Nair, Tambe, and Marsella, “Role Allocation and Reallocation in Multiagent Teams: Towards a Practical Analysis,” AAMAS 2003.

Implementation of Agent Communications for Joint Commitments. Implementing the algorithm for message passing for joint commitments based on papers by P. R. Cohen and H. J. Levesque using the Machinetta software framework.

Implementing the sequential bidding algorithm in Boutilier, Goldszmidt and Sabata, “Sequential Auctions for the Allocation of Resources with Complementarities” and analysis of its scalability and efficiency. Applying this algorithm to a vacation-planning domain.


Investigating University of Amsterdam’s Trilearn 2002 code for Robocup Soccer. Introducing communication breakdowns and investigating their effects on team performance.

Investigating Tolerance (bounded suboptimality of solution quality) in ADOPT, as applied to meeting scheduling. How much speed up can generated using various tolerance levels? How does increasing the tolerance bound affect solution quality? Based on Maheswaran, Tambe, Bowring, Pearce and Varakantham: “Taking DCOP to

Development of new RoboCup decision making layer, built on top of low-level soccer playing routines provided by TsinghuAeolus and UvA Trilearn.

Analysis of the Passup Method as applied to ADOPT. Determining which parts of the Passup Method contribute most to speedups in ADOPT. Based on Maheswaran, Tambe, Bowring, Pearce and Varakantham: “Taking DCOP to the Real World: Efficient Complete Solutions for Distributed Multi-Event Scheduling,” AAMAS 2004.

Comparison of four strategies (greedy, opportunistic, community, and teamwork) for agents in a simulation of an epidemic outbreak. Agents are doctors and patients.

Implementation and verification of results in simulations by Stefan Urbanek in “Visualisation of Trust in Evolutionary Simulation of Multi-agent Based Systems” using the Swarm agent architecture.