Foreword

Agents inhabit environments containing other agents. These agents interact in a variety of circumstances. Just as an agent has to tradeoff its own goals under time constraints, multiple agents in such shared environments have to tradeoff goals with others because of resource constraints and goal conflicts. On the other hand, agents can engage in fruitful dialogue by which they can unearth new possibilities and form new productive partnerships. *Negotiation is a process by which agents interactively settle on mutually agreeable behaviors to serve common purpose.*

As the internet becomes an increasingly viable medium for the deployment of autonomous agents acting on behalf of their users, it becomes evident that such agents should be endowed with the capability of negotiating settlements with other agents to further user interests. Typical negotiation instances in this context including settling prices for services and goods, forming dynamic alliances with other agents to effectively exploit windows of opportunities, settling goal or resource conflicts, etc.

Agents negotiate under a variety of information, time, and computational restrictions. A key research issue in agents and multiagent research is to develop negotiation procedures by which agents can efficiently and effectively negotiate solutions. Effectiveness requires that the outcome is fair, acceptable, or desirable to the parties involved in the negotiation process. Efficiency requires that the procedure is not excessively time-consuming or computing-intensive.

There exists a critical need for negotiation mechanisms and reasoning procedures by which two or more agents can quickly reach consensus about arranging their actions to avoid conflicts and enable new collaborations. The workshop participants were asked to address the following and related issues:

- Negotiation framework, languages, and protocols.

- Characterizing negotiation schemes in terms of modeling power, communication abilities, knowledge requirement, processing abilities of agents.

- Negotiating to form, maintain, and reorganize teams or coalitions.

- Negotiation roles of agents; agents that facilitate the negotiation process.

- Negotiation in open markets and auctions.

- Specific applications demonstrating agents negotiating in real environments.

- Learning to negotiate.