

Complex practical negotiations based on autonomous agents

Citation for published version (APA):

Chen, S. (2014). *Complex practical negotiations based on autonomous agents*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20141021sc>

Document status and date:

Published: 01/01/2014

DOI:

[10.26481/dis.20141021sc](https://doi.org/10.26481/dis.20141021sc)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

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Propositions

Accompanying the dissertation “Complex Practical Negotiations based on Autonomous Agents” by Siqi Chen

1. Heuristic negotiation approaches are able to operate successfully within a broader range of real-world problems than game-theoretic and argumentation-based approaches (Chapter 2).
2. Learning opponent models is a key ability of a negotiating agent in complex negotiations (Chapter 3).
3. Agents can benefit from an adaptive concession strategy on the basis of learnt opponent models against unknown opponents (Chapter 4).
4. Game-theoretical analysis is useful to reveal strategy performance in scenarios that concern a limited number of participants (Chapter 5).
5. Spatial evolutionary game theory can provide valuable insights in strategy dynamics of a large population of competitive agents (Chapter 6).
6. Multi-agent systems can solve problems that are difficult or even impossible to solve for an individual agent, where various social interactions (e.g., cooperation, coordination, negotiation) can be made among agents.
7. In multi-agent systems some effective communication mechanism is needed, enabling groups of agents to converge to a mutual agreement w.r.t. some belief, goal or plan.
8. In multi-agent systems the degree of autonomy and the range of adaptability are associated with the level of intelligence that an individual agent possesses.
9. As an attractive alternative to current e-commerce techniques, automated negotiation enjoys the advantage of automating decision-making among digital entities or between humans and digital entities in open and real time electronic market places.

10. Science changes Ph.D. students more than Ph.D. students change science.

11. Just as a well-spent day brings a good sleep night, so will a well-spent life bring a peaceful death.