

# Social landscape: reasoning for joint activity in human- robot teams essay example...

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In his article “ Social Landscape: reasoning for joint activity in human-robot teams.” Zuckerman and Hadad present a social behavior model that would enhance the capacity of computational entities (agents and robots). The idea behind the model is that computational agents require social capacities similar to those of humans. As a result, there is need to design principles that would enable the creation of agents capable of utilizing interpersonal behaviour to achieve their goals. The article provides a theoretical perspective that would utilize the belief-desire- intention (BDI) model of human reasoning to achieve maximum benefits in real-life scenarios.

The main aim of the researchers in this article is to explain the social aspects involved in human-robot teams. The topics covered in the article include: the social behaviour spectrum, social reasoning and relationship to other BDI-based models.

According to Zuckerman and Hadad, the model discussed in the article gives a full social spectrum unlike other previous models that discussed specific aspects of the social behaviour spectrum. The model discussed also provides a theoretical foundation for predicting and explaining the behaviour of social agents and gives a set of design principles that guide the creation of agents capable of engaging in behaviours that span the entire spectrum. Again, unlike previous models that focus on cooperation only, the model discussed in the article gives a practical picture of real-life scenarios whereby the agents ( and robots) work in a cooperative, individual or competitive manner depending on their desires. Therefore, the model discussed in this article appreciates the complex relationships involved in human-robot team operations.

Although the article goes to great lengths to give different social scenarios and the best means to maximize the output of computational agents in such scenarios, there is no evidence to suggest that the model has been put to test in realistic settings. Again, the model is based on the assumption that computational agents work in pairs. The reality is that team operations require the simultaneous coordination of more than one agent at any specific point in time. As a result, the model does not give a breakdown of cases where agents have to work in teams. Moreover, the issue of communication between the teams is not addressed articulately in the article.

Nevertheless, the article is closely related to other class readings which discuss human-robot team networks. For example, the article “Situated Communication for Joint Activity in Human Robot Teams” supports the idea that computational agents are expected to work in social settings that would require them have human decision making capabilities to act independently while at the same time maintaining a close touch with the other agents in the operation. The complex nature of real-life scenarios makes the researchers in both articles explore workable layouts that would facilitate flawless joint human-robot team operations. Above all, the article mentioned above also supports the idea of developing agents with semi-autonomous capacity instead of developing with fully independent capacity. This enables human-robot teams to work in tandem.

The references found in the article also make an interesting read. For example, M. P. Georgeff, “Decision-Making in an Embedded Reasoning System,” Proc. 11th Int’l Joint Conf. Artificial Intelligence (IJCAI), Morgan

Kaufmann, 1989, pp. 972–978 gives a breakdown of the decision-making challenges encountered when experimenting with human-robot teams.

**For its interesting ideas, the article has also been cited by other authors. For example,**

Bradshaw, Jeffrey. Human-Agent Robot Teamwork. April 2, 2012.

<http://www.jeffreybradshaw.net/publications/IS-27-02-Gei.pdf> (accessed October

**27, 2013) makes reference to the article when discussing the dynamism of human**

robot team operations.

Hoffman, G. Collaboration in Human-Robot Teams . 2012.

<http://web.media.mit.edu/~guy/publications/HoffmanAIAA04.pdf> (accessed October

**27, 2013) also makes reference to the article in explaining the communication aspects**

involved when working with computational agents.

Above all the, the article fits well with the course objectives of explaining the environment within which computational entities work and in explaining the interdependence between autonomy of agents and the overall performance. Lastly, the article gives simple utility functions that are mostly likely to be used by computational agents.

## **Bibliography**

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