

SOME RESULTS ON MULTIAGENT ALGORITHMS IN SOCIAL COMPUTING CONTEXT

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INTRODUCTION.

A distributed system is a group of decentralized interacting executors. A distributed algorithm [1] is the communication protocol for a distributed system that transforms the group into a team to solve some task. A multiagent system [2] is a distributed system that consists of autonomous reactive agents, i.e. executors which internal states can be characterized in socio-human terms such as Beliefs, Desires, and Intentions. A multiagent algorithm is a distributed algorithm for a multiagent system.

MATERIALS AND METHODS.

We study the multiagent algorithmic problem that was introduced in [3] and is called *Rational Agents at the Marketplace*. Some multiagent algorithms for these problems were previously suggested and manually proved in [3]. Some results about information exchange were studied in [4]. This time we address a social issue of agent anonymity and privacy in these algorithms and also affirm previous results related to information exchange.

RESULTS AND DISCUSSION.

We prove manually the following proposition: Let us assume that all prices at the marketplace are integers presented by fixed finite number of digits in any (fixed) position notation. Then there exists a variant of the protocol from [3] in which the agents do not disclose to each other their individual price-lists.

Unfortunately, formal validation of properties of multiagent systems and knowledge-algorithms has non-elementary (lower and upper) complexity [5]. So validation of systems and algorithms of this kind is still a complicated and challenging problem to be solved.

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