A Cooperative Multi-Agent Approach in Support of Learning Object Recommendations

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Abstract: Autonomous agents have captivated researchers from many fields for a long time with the main research contributions originating from Artificial Intelligence, Human-Computer Interaction, and Concurrent Object-Based Systems. In general, agents have been perceived as being able to perform a variety of tasks on the internet, and within industrial and commercial applications as result of their situated, self-directed, goal-oriented behaviour. As a result, there is need for communication amongst agents since they periodically have to exchange knowledge and results in order to accomplish individual objectives. Furthermore, coordination of the activities and tasks being performed by agents has to be explicitly controlled. This paper describes the types of agents which are commonly deployed in systems and explains the importance of cooperation and interoperation in light of the tasks which these agents typically perform. The paper discusses the cooperative synchronization of the agents in multi-agent system called MARS which recommends online educational materials to users based on their learning interests.

Key-Words: - Agent, communication, coordination, decision-making, learning objects, recommender systems