

学术研究

多Agent对抗环境下联盟形成的信任模型

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摘要 提出了一种用于多Agent对抗环境下联盟形成的信任模型CORE, 模型从能力和名誉两个方面来描述Agent的信任度, 用能力向量空间中的距离公式来度量Agent胜任具体任务的能力大小, 用隶属度函数来描述Agent的名誉。任务开始时, 模型按信任度大小选取合适的Agent形成联盟, 任务中Agent能力动态增长, 名誉动态变化, 任务结束后, 模型根据联盟中Agent的表现情况计算新的信任度, 作为下一个任务来临时联盟形成的依据。最后, 在NetLogo平台上模拟实现了该模型。

关键词 [Agent联盟](#) [信任](#) [能力](#) [名誉](#)

分类号 [TP311](#)

A trust model for agent coalition formation in multi-agent counter environment

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Abstract

CORE, a trust model is proposed to solve agent coalition formation problem in multi-agent counter environment. The model characterizes an agent's trust from two aspects of competence and reputation. The Euclidean distance formula of vector space on competence field is used to measure the extent which an agent fits for a particular task, and the membership function is used to characterize an agent's reputation. At the begin of the task, the model selects appropriate agents to form a coalition according to their trust value; in the middle of the task, the agent's competence gains and reputation updates; after completing the task, the model can renovate every agent's trust according to their behavior during the coalition, which is viewed as an evidence for next task. Finally, the model is carried out by programming on the NetLogo software.

Key words [Agent coalition](#) [trust](#) [competent](#) [reputation](#)

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