

博士论坛

分布式网络环境下实体行为信任的评估方法

田立勤^{1,3}, 林闯², 杨扬¹

1. 北京科技大学 信息工程学院, 北京 100083
2. 清华大学 计算机科学与技术系, 北京 100084
3. 华北科技学院 计算机系, 北京 101601

收稿日期 2008-2-4 修回日期 2008-3-13 网络版发布日期 2008-6-6 接受日期

摘要 随着分布式网络的发展, 网络的资源环境变得越来越复杂和难以预测, 使得越来越多的应用需要建立信任, 特别是在本来互不相识的实体之间建立信任。主要给出了较全面反映信任特性的信任计算方法, 首次给出了证据更新的计算方法, 在此基础上给出了基于客观证据的直接信任、推荐信任和推荐者自身信任更新的计算公式, 并在计算中增加了可信度因子, 使得通过计算得到的信任自包含可信度; 提出了同构推荐者和非同构推荐者的概念和基于这两者的不同的信任计算方法, 提高了信任评估的可信度; 论述了信任推荐的4种拓扑结构及其计算方法。最后分析了计算方法体现出信任的主观性、动态性、非传递性和受历史影响等特性。方法具有实用、防欺骗和可扩展特点, 可直接用来指导实际网络的信任计算。

关键词 [分布式网络](#) [行为信任计算](#) [信任分析](#)

分类号

Behavior trust computation in distributed network

TIAN Li-qin^{1,3}, LIN Chuang², YANG Yang¹

1. Information Engineering School, University of Science and Technology Beijing, Beijing 100083, China
2. Department of Computer Science and Technology, Tsinghua University, Beijing 100084, China
3. North China Institute of Science and Technology, Beijing 101601, China

Abstract

With the development of the distributed network, more and more applications need to establish the trust, especially among the stranger entity, due to the complicated environment of the share resource. Because the share system is open, dynamic and uncertain, so it is difficult for the nodes to master all the security information, which leads to the undependability and security threat. So far, some of the trust model has been given, but they still have some limitations. Some model don't distinguish trusted-evidence from the no trusted-evidence, it may cause the cheating from the malice node; Some model only update node's trust and ignore updating of the recommendation-node's trust which not only don't punish the cheating of the recommender but also don't encourage the recommendation. So how to get a comprehensive computation of the trust, which embodies the characteristic of the trust, still is an important thing to research. Comprehensive methods of trust computation, such as updating of the evidence and recommender's trust, direct trust computation and recommendation trust computation, are discussed. Also the authors discuss the trust recommendation structure such as sequent, parallel, sequent-parallel and network structure. The trust evaluation in this paper, which can keep down the cheating and reflects the trust characteristic such as subjectivity, dynamic, non-transitivity and so on, is practical and scalable. The authors also give a new notion of the homogeneous recommender and heterogeneous recommender, by distinguishing the two kinds of the recommendation, can get more accurate trust evaluation.

Key words [distributed network](#) [computation of the behaviour trust](#) [analysis of the trust](#)

DOI:

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