Abstract

In a completely open Web service environment, where identities cannot be directly checked, only hard security mechanisms are incapable to guarantee fair interactions among the service providers and service consumers. Trust and reputation modeling and management based on social approach is proved to provide the necessary safeguards against malicious interacting partners. In the heart of any trust modeling and management mechanism, predicting trust values for making a decision for interaction at future time is a key part. Trust prediction is a method of predicting potentially unknown trust of a target partner using its previously observed behaviour and also the recommendations received from other peers. In this paper, a trust prediction model based on detection of behavior pattern that may prevail at future time point using a Markov model is proposed. The trust value is obtained from a Gaussian process using the detected pattern.

References
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**Index Terms**

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Trust, Reputation, clustering, Gaussian process, regression, Markov model.