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数字图书馆系统中基于Ontology的用户偏好模型

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Abstract

Personalization poses new challenges to digital library. How to describe users' preferences and how to support preference queries in digital libraries are among the top demanding tasks. A strict partial order preference model has been proposed, and a series of preference generation methods have already been developed for relational data. However, the semi-structured data stored in digital libraries make it more complex to model users' preferences than its counterpart in relational databases. The partial order preference model cannot suffice to support such complex preferences. A new ontology based preference model is proposed in this paper to overcome this difficulty. This model describes the documents along with the preferences regarding the documents in the digital libraries using ontology, which allows both the structure and the semantic of a user's preference to be fully represented. A set of complex preference operations have also been provided in the model to support the personalized query and recommendation efficiently.

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摘要

个性化服务技术为数字图书馆的研究带来一些新的挑战.如何描述用户的偏好以及如何使数字图书馆支持偏好查询是有待研究的一个问题.人们已经提出了基于偏序关系的用户偏好模型,并针对关系数据提出了一系列偏好构造方法.数字图书馆中的数据是半结构数据.半结构数据上用户偏好的描述比关系数据复杂得多.偏序模型无法有效地表达数字图书馆中的用户偏好.提出基于ontology的新的用户偏好模型,用ontology来描述数字图书馆中的文本和文本上的偏好.该模型能够充分表达用户偏好的结构和语义,并提供了复杂的偏好操作,能够有效地支持数字图书馆中的个性化检索和推荐操作.

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