



## 基于本体的个性化图书推荐方法研究

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**摘要** 针对目前图书馆馆藏日渐增多致使用户获取资源负担加重的问题,提出一种混合式图书推荐方法。该方法用语义手段描述图书资源和借阅者,建立用户兴趣与图书资源特征的联系,通过查询修正与基于规则和实例的推理实现个性化推荐,同时在推荐结果中加入辅助推荐。根据用户的反馈信息分析、调整推荐流程,在一定程度上减少传统协同过滤方法的“新用户”和“新对象”问题。实验结果表明,该方法可以提高推荐的命中率,具有良好的效果。

**关键词:** 本体 混合式推荐 个性化推荐 用户偏好

**Abstract:** The huge increase of library resources makes users' cost of accessing valuable knowledge becoming much higher. For this problem, the paper proposes a hybrid recommendation method for library resources, which adopts semantic technologies to describe library resources and borrowers, establishes the association between user preferences and library resource features. Through query modification, rule-based and case-based inference, the method realizes personalized recommendation. Meanwhile, some auxiliary recommendation approaches are integrated. The recommendation process can be analyzed and optimized according to users' feedback. Additionally, this method reduces the "new user" and "new item" problems in traditional collaborative filtering method to a certain extent. Experimental results show that the proposed method can enhance the hit rate.

**Keywords:** [Ontology](#), [Hybrid recommendation](#), [Personalized recommendation](#), [User preference](#)

收稿日期: 2012-10-12;

基金资助: 本文系第二批江苏教育改革发展战略性研究课题重点课题项目“高教园区教育资源共享机制研究”(项目编号: Z/2012/12)的研究成果之一。

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引用本文:

汪英姿. 基于本体的个性化图书推荐方法研究[J]. 现代图书情报技术, 2012, V(12): 72-78

Wang Yingzi. Research on Ontology-based Personalized Recommendation Method for Library Resources[J], 2012, V(12): 72-78

链接本文:

<http://www.infotech.ac.cn/CN/> 或 <http://www.infotech.ac.cn/CN/Y2012/V/112/72>



- [1] Crespo R G, Martinez O S, Lovelle J M C, et al. Recommendation System Based on User Interaction Data Applied to Intelligent Electronic Books[J]. *Computers in Human Behavior*, 2011, 27(4): 1445-1449.
- [2] Adomavicius G, Tuzhilin A. Towards the Next Generation of Recommender Systems: A Survey of the State-of Art and Possible Extensions[J]. *IEEE Transactions on Knowledge and Data Engineering*, 2005, 17(6): 734-749.
- [3] 赵继海. 论数字图书馆个性化定制服务[J]. 中国图书馆学报, 2001, 27(3): 63-65. (Zhao Jihai. On Personalized Customization Services of Digital Library [J]. *Journal of Library Science in China*, 2001, 27 (3): 63-65.)
- [4] Gruber T R. A Translation Approach to Portable Ontology Specifications[J]. *Knowledge Acquisition*, 1993, 5(2): 199-220.
- [5] Rho S, Song S, Hwang E, et al. COMUS: Ontological and Rule-based Reasoning for Music Recommendation System[C]. In: *Proceedings of the 13th Pacific-Asia Conference on Advances in Knowledge Discovery and Data Mining (PAKDD' 09)*. Heidelberg, Berlin: Springer-Verlag, 2009: 859-866.

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## 作者相关文章

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- [6] Yang S Y. Developing an Ontology-based Information Integration and Recommendation System for Scholars[J]. *Expert Systems with Applications*, 2010, 37(10): 7065-7079. 
- [7] Chen R C, Huang Y H, Bau C T, et al. A Recommendation System Based on Domain Ontology and SWRL for Anti-diabetic Drugs Selection[J]. *Expert Systems with Applications*, 2012, 39(4): 3995-4006. 
- [8] 周若静. 本体的构建及其在图书信息检索中的应用研究[D]. 大连: 大连海事大学, 2009. (Zhou Ruoqing. Research and Application on Ontology Modeling and Ontology-based Book Information Retrieval[D]. Dalian: Dalian Maritime University, 2009.)
- [9] 牟冬梅. 数字图书馆知识组织语义互联策略及其应用研究[D]. 长春: 吉林大学, 2009. (Mu Dongmei. Study on Semantic Interconnection Strategy and Application on Digital Library Knowledge Organization[D]. Changchun: Jilin University, 2009.)
- [10] Yan D W, Cen Y H, Zhang W, et al. Ontology-based Framework for Personalized Recommendation in Digital Libraries[J]. *Journal of Southeast University: English Edition*, 2006, 22(3): 385-388.
- [11] 袁静. 基于本体的数字图书馆个性化服务研究[J]. 图书馆建设, 2009 (1): 66-69. (Yuan Jing. Research on the Personalized Service of the Digital Library Based on Ontology[J]. *Library Development*, 2009(1):66-69.)
- [12] 丁雪, 张玉峰. 基于本体的智能数字图书馆个性化推荐用户本体研究[J]. 现代情报, 2009 (12): 61-65. (Ding Xue, Zhang Yufeng. Research on User Ontology in Personalized Recommendation of Ontology-based Intelligent Digital Library[J]. *Journal of Modern Information*, 2009 (12):61-65.)
- [13] 《中国图书馆分类法》编委会. 中国图书馆分类法第五版简表[EB/OL]. [2012-09-08]. <http://clc.nlc.gov.cn/ztfdsb.jsp>. (Editorial Board of Chinese Library Classification. The Fifth Edition of Summary Table of Chinese Library Classification[EB/OL]. [2012-09-08]. <http://clc.nlc.gov.cn/ztfdsb.jsp>.)
- [14] Smith M K, Welty C, McGuinness D L. OWL Web Ontology Language Guide[EB/OL]. [2012-09-10]. <http://www.w3.org/TR/owl-guide/>.
- [15] Prud' hommeaux E, Seaborne A. SPARQL Query Language for RDF[EB/OL]. [2012-09-15]. <http://www.w3.org/TR/rdf-sparql-query/>.
- [16] The Apache Software Foundation. What is Jena?[EB/OL]. [2012-09-15]. [http://jena.apache.org/about\\_jena/about.html](http://jena.apache.org/about_jena/about.html).
- [17] Wikipedia. Cosine Similarity[EB/OL]. [2012-09-17]. [http://en.wikipedia.org/wiki/Cosine\\_similarity](http://en.wikipedia.org/wiki/Cosine_similarity).
- [18] Likert R. A Technique for The Measurement of Attitudes[J]. *Archives of Psychology*, 1932, 22(140): 1-55.
- [1] 米杨, 曹锦丹. 顶级本体统控的多本体语义标注实证研究[J]. 现代图书情报技术, 2012,(9): 36-41
- [2] 宋文, 黄金霞, 刘毅, 汤怡洁. 面向知识发现的SKE关键技术及服务[J]. 现代图书情报技术, 2012,28(7/8): 13-18
- [3] 黄华军, 曾新红, 林伟明. OTCSS关联数据服务的研究与实现[J]. 现代图书情报技术, 2012,28(7/8): 40-47
- [4] 马健, 杜泽宇, 李树青. 基于多兴趣特征分析的图书馆个性化图书推荐方法[J]. 现代图书情报技术, 2012,28(6): 1-8
- [5] 俞小怡, 刘旭, 裘江南, 董锦霞. 基于菱形思维的概念检索关键词扩展方法研究[J]. 现代图书情报技术, 2012,28(6): 29-35
- [6] 薛建武, 白隼. 本体拓扑结构关系存储研究[J]. 现代图书情报技术, 2012,28(5): 26-31
- [7] 李树青, 刘晓倩. 基于向心扩散加权XML模型的异构用户个性化模式匹配方法[J]. 现代图书情报技术, 2012,28(5): 32-40
- [8] 俞琰, 邱广华. 用户兴趣变化感知的重启动随机游走推荐算法研究[J]. 现代图书情报技术, 2012,28(4): 48-53
- [9] 倪萍, 陆宇宏. 采用C-F模型的中医本体诊断推理与实现[J]. 现代图书情报技术, 2012,28(4): 22-28
- [10] 俞琰, 邱广华. 显式评分的重启动随机游走推荐算法研究[J]. 现代图书情报技术, 2012,28(3): 8-14
- [11] 熊晶, 郭磊, 徐建良. 领域本体在海洋生态知识管理中的应用[J]. 现代图书情报技术, 2012,28(3): 15-22
- [12] 毕强, 鲍玉来. 基于领域本体和RSS的OA资源集成门户设计与实现[J]. 现代图书情报技术, 2012,28(3): 78-82
- [13] 刘剑涛. 个性化推荐系统中用户多态聚类研究[J]. 现代图书情报技术, 2012,28(2): 18-22
- [14] 刘萍, 胡月红. 基于FCA和关联规则的情报学本体构建[J]. 现代图书情报技术, 2012,28(2): 34-40
- [15] 周群芳. 相似专利检测研究[J]. 现代图书情报技术, 2012,(11): 60-64