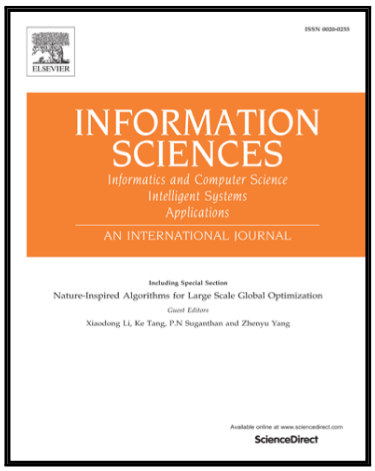

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Lin Zheng, Fuxi Zhu, Sheng Huang, Jin Xie

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Context Neighbor Recommender: integrating contexts via neighbors for recommendations

Lin Zheng[a,b], Fuxi Zhu[a,c,*], Sheng Huang[a], Jin Xie[a]

[a] *Computer School, Wuhan University, Wuhan 430072, China*
[b] *Department of Computer Science, Hong Kong Baptist University, Hong Kong, China*
[c] *Information Department, Wuhan College, Wuhan 430212, China*

Abstract

In Recommender Systems, the techniques used for modeling implicit feedback such as search, click or purchase actions have been well studied. As additional information, contexts are often available to assist the implicit feedback approaches. The existing context-aware methods are used to directly model original contextual factors for recommendations. However, this way of utilizing contextual information makes the methods dependent on specific contexts. Moreover, they may not achieve the desired performance if the contexts are changed to those derived from other domains. To address this issue, we propose a general approach to incorporate contexts into an implicit feedback modeling framework that can utilize specific contexts but is domain independent. First, we introduce context neighbors to integrate original contextual factors. The neighbors are aggregated to form several groups. Then, our recommender builds on group interactions that expand the traditional user-item interactions. Finally, the recommendations are obtained by combining the results of all the interaction models. We evaluate the Context Neighbor Recommender (CNR) for different choices of neighbor numbers and kernel settings to further compare it with other algorithms. The experimental results show the advantages and flexibility of CNR compared to both implicit feedback methods and common context-aware models.

Keywords:
Recommender system, Item recommendation, Implicit feedback, Context

*Corresponding author. Tel.: +8618986211778.
Email addresses: linzheng@whu.edu.cn (Lin Zheng), fxzhu@whu.edu.cn (Fuxi Zhu), 2014102110042@whu.edu.cn (Sheng Huang), jinxie@whu.edu.cn (Jin Xie)