A Weibo Content Recommendation Method Based on Similarity and Trust Fusion (Postprint)

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Abstract

[Purpose/Significance] Weibo plays an important role for users in information acquisition and social network establishment. This study proposes a Weibo content recommendation method based on similarity and trust fusion, which can perform personalized content recommendation from the user needs perspective, and is meaningful for improving service quality and mitigating information overload.

[Method/Process] Based on the similarity and trust fusion algorithm, a Weibo content recommendation model is constructed. Taking Sina Weibo as the research object, data from five domains—automobile, sports, fitness, Internet, and finance—are obtained through programming, and experimental analysis and comparison of user similarity and trust computation are conducted.

[Results/Conclusion] The analysis results demonstrate that the proposed method can effectively represent and mine Weibo content, and improve the accuracy of Weibo recommendations and user satisfaction.

Full Text

A Method of Micro-blog Content Recommendation Based on the Fusion of Similarity and Trust Degree

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Abstract

Micro-blog plays an important role in helping users obtain information and build social networks. This paper proposes a micro-blog content recommendation method based on the fusion of similarity and trust degree, which can

perform personalized micro-blog content recommendation from the perspective of user needs and is significant for improving micro-blog service quality and alleviating information overload. Based on the fusion algorithm of similarity and trust degree, we constructed a micro-blog content recommendation model. Taking Sina Weibo as the research object, we collected data from five domains (automobile, sports, fitness, internet, and finance) through programming methods and conducted comparative experiments on user similarity and trust calculation. The analysis results show that this method can effectively represent and mine micro-blog content and improve the accuracy and user satisfaction of micro-blog recommendations.

Keywords: similarity; trust degree; micro-blog; content recommendation

1. Introduction

With the rapid development of social media, micro-blog platforms have become essential channels for users to access information and establish social connections. However, information overload has become a critical challenge. Traditional recommendation methods often rely solely on content similarity, neglecting the social trust relationships between users. This paper addresses this limitation by proposing a novel approach that fuses similarity and trust degree to enhance recommendation quality.

2. Methodology

We developed a micro-blog content recommendation model based on the fusion of similarity and trust degree algorithms. Our approach leverages advanced natural language processing techniques including LDA (Latent Dirichlet Allocation) and word2vec for content representation. The model integrates user similarity computed from content features with trust degree derived from social network interactions to generate personalized recommendations.

3. Experimental Setup

Our experiments utilized Sina Weibo as the research platform. We programmatically collected data from five distinct domains: automobiles, sports, fitness, internet, and finance. The dataset comprised 4,411 users with activity spanning from January 1, 2016 to 2017. We evaluated our method against baseline approaches using standard recommendation metrics.

4. Evaluation Metrics

We employed multiple evaluation metrics to assess recommendation quality. Mean Absolute Error (MAE) was used to measure prediction accuracy, while Coverage evaluated the method's ability to recommend diverse items. Comparative analysis was performed between our fusion-based approach and traditional similarity-only methods.

5. Results and Analysis

The experimental results demonstrate the effectiveness of our proposed method. [Figure 1: see original paper] illustrates sample results from the similarity calculation component, while [Figure 2: see original paper] shows the trust degree computation outcomes. [Figure 3: see original paper] presents the MAE value comparison between our method and alternative algorithms, showing significant improvement in accuracy. [Figure 4: see original paper] compares user satisfaction values, further confirming the superiority of the fusion approach. provides a comparison of user tool usage patterns across different platforms.

The analysis indicates that combining similarity and trust degree enables more effective representation and mining of micro-blog content, leading to enhanced recommendation accuracy and user satisfaction.

6. Conclusion

This paper proposes a micro-blog content recommendation method based on the fusion of similarity and trust degree. Experimental results on real-world Sina Weibo data validate that our approach effectively addresses information overload while improving service quality. The method's ability to leverage both content features and social relationships makes it particularly suitable for social media recommendation scenarios.

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Author Contributions

Huang Wei: Proposed the research proposition and designed the study framework.
Li Ji: Drafted the manuscript, performed data processing and empirical analysis, and revised the final version.
Guo Sulin: Contributed to manuscript revision and refinement.

Note: Figure translations are in progress. See original paper for figures.