

# 微博个性化标签图形化 RTM 模型 Gibbs 采样推荐

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**摘要:** 为提高个性化标签推荐方法性能, 提出基于 Gibbs 采样推理的微博个性化标签隐含关系主题模型(Relation Topic Model, RTM)推荐算法. 首先, 利用图形化形式对微博中的潜在局部信息进行表达, 对用户主题分布为代表的用户进行 top-k 相似用户发现, 然后计算出现在这些用户中的所有标签的频率, 并推荐与用户最相关的标签. 其次, 为挖掘潜在主题信息, 利用带惩罚项的增强型余弦相似度 RTM 模型对微博标签进行命名, 大大提高联合建模对潜在主题生成标签的影响, 并可发现全局标签和主题之间的关系; 最后, 通过真实的实验结果显示, 所提推荐方法要优于选取的 TF-IDF、RTMSA 等几种经典标签推荐算法, 验证了算法有效性.

**关键词:** Gibbs 采样; 微博标签; 关系主题模型; top-k 算法

## Gibbs Sampling Inference Based RTM Model for Micro-blog

### Personalized Label Recommendation

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**Abstract:** In order to improve the performance of personalized tag recommendation method, the Gibbs sampling inference based RTM model for Micro-blog personalized label recommendation was proposed. Firstly, we used the user topic distribution as the representative of the user with Top-k similar for the potential local information in micro-blog, Then we calculated the frequency of all tags appearing in these users, and recommended the most relevant tags with the user. Secondly, in order to explore the potential theme information, we named the micro-blog tags by using the implicit relation model, which could greatly improves the influence of the joint modeling on the latent topic generation tags, and finds out the relationship between the global tags and the topic; Finally, the experimental results show that the proposed method is superior to the selected TF-IDF, RTMSA and other classical label recommendation algorithm, and verify the effectiveness of the proposed algorithm.

**Key words:** gibbs sampling; micro-blog tags; relational topic model; top-k algorithm

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