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学术研究

广域推荐：社会网络与协同过滤

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摘要 商务企业应用数据挖掘技术向潜在客户推荐产品。大多数推荐系统聚焦研究兴趣于特定的领域，如电影或书籍。使用用户相似度或产品相似度的推荐算法通常可以达到较好效果。然而，当面临其他领域问题时，推荐常变得非常困难，因为数据过于稀疏，难以仅基于购买历史发现用户或产品间的相似性。为解决此问题，提出使用社会网络数据，通过对历史的观察提高产品推荐有效性。利用人工协同过滤和基于社会网络的推荐算法的最新进展进行领域推荐工作。研究显示社会网络的应用对于产品推荐具有很强的指导作用，但是，高的推荐精度需以牺牲召回率为代价。数据的稀疏性意味着社会网络并不总是可用，在这种情况下提出一种解决方案，很好地利用了社会网络的有效信息。

关键词 自动推荐系统 社会网络 协同过滤

分类号

Open Domain Recommendation： Social networks and collaborative filtering

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Abstract

Commercial enterprises employ data mining techniques to recommend products to their potential customers. Most of the prior research in recommender systems is usually focused on a specific domain such as movies or books， and recommendation algorithms using similarities between users and/or similarities between products usually perform reasonably well. However， when the domain isn't as specific， recommendation becomes much more difficult， because the data could be too sparse to find similar users or similar products based on purchasing history alone. To solve this problem， it proposes using social network data， along with rating history to enhance product recommendations. The state of art collaborative filtering algorithm and social net based recommendation algorithm are exploited for the task of open domain recommendation. It shows that when a social network can be applied， it is a strong indicator of user preference for product recommendations. However， the high precision is achieved at the cost of recall. Although the sparseness of the data may suggest that the social network is not always applicable， a solution to utilize the network in these cases is presented.

Key words recommender systems social network collaborative filtering

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