

專輯論文

基於認知的微博用戶聚類方法研究 ——以「湯蘭蘭事件」為例

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摘要

為解決微博用戶屬性數據和評論文本數據較少甚至缺失情況下的用戶聚類問題，本文提出了一種基於用戶認知差異的微博用戶聚類方法：根據用戶在關注和轉發資訊源上的判斷和選擇，構建用戶和資訊源的雙模網絡 (two-mode network)，通過雙模網絡中二部圖 (bipartite graph) 的切割，實現了用戶的聚類。採用譜聚類 (spectral clustering) 方法，建立混合的關注和轉發兩級聚類處理方式，能夠有效區分不同認知屬性的用戶群體，精準觀察資訊在社群中的傳播機制。以中國互聯網上的一個熱點事件「湯蘭蘭事件」為例，介紹微博用戶聚類方法的操作流程和評估標準。實際聚類結果表明：該方法在劃分群體規模和準確性上，綜合性能較好，對於社交平台用戶的群體劃分、行為預測和輿情分析，具有較強的實際應用價值。

關鍵詞：微博用戶、雙模網絡、聚類

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Research on Microblog User Clustering from a Cognitive Perspective

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Abstract

Focusing on microblog user attributes and missing content data, a microblog users clustering method based on users' cognitive differences is proposed. By referencing users' selections and judgments regarding the information sources they follow and forward, we can identify the typical characteristics of group members; we can also use this information to analyze users' behaviors and attitudes while they are participating in various kinds of groups. On the basis of users' perceived dissimilarity regarding microblog topics, a two-mode network comprised of user and media is built. The clustering of users is then realized by cutting the bipartite graph in the network. By applying the spectral clustering method to the hybrid mechanism of two clustering stages (i.e., followed topics and forwarded topics), we can effectively distinguish between user groups with different cognitive attributes; this also enables us to accurately observe the transmission mechanism of information within the community. Taking the Tang Lanlan event as an example, this paper introduces specific operation and evaluation criteria of the microblog user clustering method. Upon thorough consideration of the scale and accuracy of the group division, the results show that the comprehensive property is

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improved with use of the proposed clustering method. The actual results demonstrate the precision and effectiveness of the proposed method for the purposes of group division, behavior prediction, and public opinion analysis of social platform users.

Keywords: microblog user, two-mode network, clustering

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