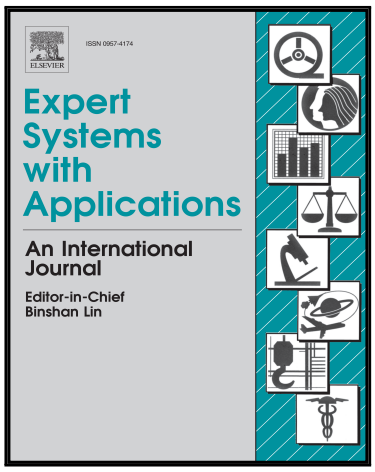

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Social Event Detection with Retweeting Behavior Correlation

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Abstract

Event detection over microblogs has attracted great research interest due to its wide application in crisis management and decision making etc. In natural disasters, complex events are reported in real time on social media sites, but these reports are invisible to crisis coordinators. Detecting these crisis events helps watchers to make right decisions rapidly, reducing injuries, deaths and economic loss. In sporting activities, detecting events helps audiences make better and more timely game viewing plans. However, existing event detection techniques are not effective at handling complex social events that evolve over time. In this paper, we propose an event detection method that takes advantage of retweeting behavior for handling the events evolution. Specifically, we first propose a topic model called RL-LDA to capture the social media information over hashtag, location, textual and retweeting behavior. Using RL-LDA, a complex event can be well handled by exploring the correlation between retweeting behavior and the event. Then to maintain the RL-LDA in a dynamic environment, we propose a dynamic update algorithm, which incrementally updates events over real time streams. Experiments over real-world datasets show that RL-LDA detects the temporal evolution of complex events effectively and efficiently.

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