

# Leveraging expertise in news feeds: A *Twitter* case study

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**Abstract.** Due to the large amount of information posted on social media, users find themselves overwhelmed by updates displayed chronologically in their news feed. Moreover, most of them are considered irrelevant. Ranking news feeds updates in order of relevance is proposed to help beneficiary users quickly catch up with the relevant updates. Four types of features are mainly used to predict the relevance: (1) the relevance of the update's content to the beneficiary's interests; (2) the social tie strength between the beneficiary and the update's author; (3) the author's authority; and (4) the update's quality. In this work, we propose an approach that leverages another type of feature which is the author's expertise for the update's topic. Experimental results on *Twitter* highlight that judging expertise is crucial for maximizing the relevance of updates in news feeds.

## 1 Introduction

Social media, such as *Facebook* or *Twitter*, contribute to the concept of *Big data*. Social data are known for their volumes that can reach petabytes ( $10^{15}$  bytes), their variety (messages, articles, videos, music, images, etc.), and their velocity (arriving in real time or almost) (Xu et al., 2016a). Due to the large amount of information posted on social media (Vougioukas et al., 2017), users find themselves overwhelmed by updates displayed chronologically in their news feed (De Maio et al., 2017). Moreover, most of them are considered irrelevant (Vougioukas et al., 2017). Therefore, it becomes difficult for users to quickly catch up with relevant updates (Kuang et al., 2016). Based on the prediction of a relevance score between a beneficiary user and a new unread update in his news feed (Belkacem et al., 2016), approaches have been proposed for ranking news feeds updates in a descending relevance order (Agarwal et al., 2015). These approaches generally use 4 types of features that may influence relevance (Belkacem et al., 2016): (1) the relevance of the update's content to the beneficiary's interests; (2) the social tie strength between the beneficiary and the update's author; (3) the author's authority; and (4) the update's quality. We believe that using these features is necessary, but not sufficient. For example, updates posted by a typical user may not attract the attention such as those posted