# **Foreword to the Special Issue on Mining Actionable Insights from Social Networks**

[I really don’t like these first few sentences since it emphasizes marketing, but some of your papers don’t talk about marketing at all.] In recent years, companies has become interested in developing tools and techniques that can utilize social data to gain a competitive advantage over competitors. Marketing tools, for example, can aggregate and analyze a large volume of social content published online in order to extract insights that can aid the interested parties to improve their services, products, and profile as perceived by the target community. [I suggest starting here:] Research concerning the understanding online social networks has focused on producing theories and methodologies that help understand user communities and their associated phenomena. Such theoretical work can be applied to extracting actionable insights from social data such as building predictive models (e.g., box office prediction, election prediction, virus spread tracking), marketing management (e.g., sale price suggestion, new product sales prediction, brand popularity, forecasting business downfall), user modeling (e.g., predicting users’ daily activities including recurring actions, customer churn prediction, customer clustering, determining users’ trustworthiness, reliability and credibility), knowledge dissemination in networks (e.g., topic and trend prediction, modeling information diffusion, identification of causality and correlation among event/topics/communities), and information diffusion modeling (e.g., sentiment diffusion, competitive intelligence), just to name a few.

The special issue on “Mining Actionable Insights from Social Networks” was edited with the aim of depicting theories, methodologies and techniques that enable the extraction of actionable insights from online social networks. We received 18 high-quality submissions from leading researchers in the area and finally accepted 5 papers for this special issue. All papers were peer-reviewed by expert reviewers and in some cases went through a couple of revisions and review phases in order to make sure that the quality standards are properly met. We believe that this special issue contains some of the leading work in this area that can be used for further research in the field of social network analysis.

The paper by Javier Garcia-Bernardo and Frank W. Takes entitled “*The Effects of Data Quality on the Analysis of Corporate Board Interlock Networks*” investigates the important issue of data quality in the analysis of social network data. It especially focuses on the completeness and accuracy of data in *board interlock networks*, a kind of *corporate networks*, in which sharing board members among corporations are represented as edges that relate corporate nodes. The authors discuss that incomplete and non-manually verified data may lead to unreliable insights from the data. Further they provide an automatic data assessment method for the analysis of data completeness and provide a method for automatically improving the accuracy of the data. They conduct comprehensive experiments on a corporate network including more than 160 million companies and more than 90 million board members for assessing the data incompleteness and apply their accuracy method for finding and removing duplicate nodes and edges in a Swedish corporation network of 260,611companies and 1,269,560 sharing board members.

The work by Imen Bizid et al., “*Detecting prominent microblog users over crisis events phases*”, proposes a real-time user-centric retrieval approach for finding prominent social network users during crisis events. The authors argue that for the purpose of reporting different phases of a crisis, existing graph-based and vector-based user modelling approaches in social networks cannot appropriately find the prominent users because a prominent user can be an ordinary user without a large number of connections that witness and report a certain phase of a crisis, so he/she could be idle before or after a certain phase of the event. For applications like crisis events, this paper presents a user ranking model based on the user behavior evolution over different phases of an event. The ranking model includes off-line feature extraction and feature selection steps using past crisis events and a generative prediction model that ranks users based on their representations that are calculated online. Experiments show that the model can identify prominent users at early stages of a crisis.

The paper entitled “*Investment recommendation by discovering high-quality opinions in investor based social networks”* focuses on predicting qualities of opinions in social networks when exchanging investment opinions and views. It studies and formulates different factors such as author experience, opinion content, and stock characteristics for the prediction model. The paper presents a recommendation technique for recommending high-quality investment opinions to social network users. It also investigates generating portfolios from investment opinions in different qualities.

The work by Jimmy Xiangji Huang et al., entitled “*Mining authoritative and topical evidence from the blogosphere for improving opinion retrieval*” analyses search and retrieval of the documents that are both opinionated and relevant to a topic of interest in an interactive blog network, where visitors are allowed to rate the blog posts, leave comments and interact. This work proposes a three-phased approach for finding and boosting the relevant blog posts: 1) extracting topical terms, terms that are used by bloggers and other network users for expressing their opinions on controversial topics, using a training set of topics with relevance assessments, 2) scoring documents using a generative language model based on the occurrence of topical terms in the document and in the set of all blog posts written by the document author, and 3) ranking documents based on the integration of topical score and the relevance score that is estimated by a query dependent scoring methodology. The authors also investigate the effect of a neural relevance model on the system performance.

Finally, Ariel Monteserin et al. in their work entitled *Influence-based approach to market basket analysis* present a market basket analysis approach based on the idea of influential maximization techniques in social networks. According to their approach, instead of finding the most influential social network users, as is commonly investigated in the literature for social networks, they find the most influential products.. The proposed model has been evaluated over two real datasets extracted from Alibaba and Ponpare websites. The evaluations show that the number of potential sales is increased by discovering and activating the set of influential products using the proposed approach.