

## Preface

This special issue of the journal *Research in Computing Science* is devoted to closely interrelated topics of opinion mining, social network analysis, and authorship attribution.

Opinion mining is an emergent and very active area at crossroads of natural language processing, artificial intelligence, computer science, and big data analysis. The main goal of an opinion mining task is to collect statistics of crowdsourced opinions on a given topic, such as a product, a service, an event, a political entity, etc., addressing questions such as “do users like iPhone 7?”, “will Trump win the 2016 US presidential elections?”, or “what is the best hotel in Singapore?”, basing on the opinions of thousands or millions of people, typically available in Internet via social networks.

Collecting such opinions is very useful for many purposes. Opinion mining helps businesses to increase their income by better addressing the needs and preferences of their customers. It helps governments and political parties to better understand popular opinion and adjust their actions accordingly, winning more votes. Most importantly, it improves the life quality of ordinary people by providing recommendations based on experience of other consumers in order for us to make more informed buying decisions. It also enables real-time democracy: the ability of citizens to affect the actions of the government right now, without waiting for the next elections.

Technically, opinion mining systems rely on analysis of sentiments and emotions expressed in user-generated texts or video clips. Some authors, notably Bing Liu, consider the term “opinion mining” to be synonymous with “sentiment analysis.” However, I personally consider that these are two different processes: sentiment analysis is the process of analyzing a given single text with the purpose of determining the sentiment polarity, emotion, or opinion expressed in this text, while opinion mining should refer to the process of aggregating the results of analyzing a large number of individual documents into a statistical report such as majority opinion, breakup by social groups, etc. Thus, a number of papers included in this volume correctly refers to the task they address as sentiment analysis, which is, in my view, a part of opinion mining.

Typically, opinion mining software is applied to the analysis of user’s opinions uploaded by their authors to social networks, blogging, or microblogging systems. For more complete interpretation of these texts it is important to understand the structure of such networks and characterize their users and the interrelations between clusters of users. Social network analysis is a discipline of high importance for opinion mining.

Finally, the interpretation of mining results requires knowledge about the authors of the opinions, such as age or gender: say, do young people like iPhone 7 more than older people do? Do women prefer Clinton and men Trump? The task of identification of the authors’ characteristics from a text is called author profiling. In addition, identifying documents written by the same author, or detecting the fact that documents uploaded by the same user in fact belong to different authors, is an important factor in tracking user preferences and their change over time, as well as in

detecting opinion spam and fake (paid) reviews, which are very numerous in Internet. Accordingly, I included in this issue a number of papers on author profiling and author identification.

The papers included in this special issue were selected basing on a double-blind review procedure, with participation of 126 leading experts in the topic from 38 countries, listed at the end of this volume.

This special issue will be useful to researchers, students, and engineers working in sentiment and emotion analysis, social network analysis, natural language processing, computational linguistics, and related fields.

April 2016

Alexander Gelbukh,  
Guest Editor