applied sciences

MDPI

Editorial

Advanced Analysis Technologies for Social Media

Barbara Guidi [1]*, Carlos A. Iglesias [2], Giulio Rossetti [3] and Kevin Koidl [4]

[1] Department of Computer Science, University of Pisa, 56124 Pisa, Italy
[2] Intelligent Systems Group, Universidad Politécnica de Madrid, 28040 Madrid, Spain
[3] Knowledge Discovery and Data Mining Laboratory, Information Science and Technologies Institute, Italian National Research Council, 56124 Pisa, Italy
[4] ADAPT Research Centre, Trinity College Dublin, D02 PN40 Dublin, Ireland
* Correspondence: guidi@di.unipi.it

Keywords: social media analysis; AI for social media; decentralized solution for social media; fake news; trust and reputation in social media; blockchain for social media

1. Introduction

Interest in social media has only increased with time. Social media today represent the main channel to communicate and share personal information. Social media analysis usually combines content-based and network-based analysis. While content-based approaches analyze media using media analysis techniques, network-based approaches analyze static and dynamic network properties with the aim of detecting influencers for marketing purposes. The network-based analysis represents a fundamental process in order to understand the dynamics of these platforms. New techniques and technologies have been proposed in order to enrich the social media analytics field. In particular, decentralized approaches have been proposed in order to face privacy issues, and AI has been applied in order to improve analysis over large sets of data. The main goal of this Special Issue is to collect research contributions, applications, analyses, methodologies, or strategies that strengthen or face the knowledge of social media thanks to advanced analyses or new technologies, such as P2P networks or blockchain. In detail, 5 papers have been published in the Special Issue out of a total of 10 submitted. The next sections provide a brief summary of each of the papers published.

2. An Overview of Blockchain Online Social Media from the Technical Point of View

In [1], the authors analyse Blockchain Online Social Media (BOSM) from the technical point of view in order to highlight the main challenges of these platforms considering a real social scenario. The authors downloaded information about the social DApps from 2019 to 2021 by showing the most used blockchains and by comparing the most popular blockchains used in these social DApps in order to understand the most feasible blockchain or which new features are needed. The paper shows that almost all the social DApps are based on Ethereum, and other important blockchains are the social blockchain Steem and Hive. The authors suggest that scalability and transaction fees are the most important points in choosing a blockchain. Another important point is the consensus algorithm.

3. Applications of Advanced Analysis Technologies in Precise Governance of Social Media Rumors

In [2], the authors conduct a systematic literature mining of rumour. In detail, the authors try to highlight how to achieve precise governance of social media rumours, and specific measures and technologies. The paper proposes a literature review on rumours and clarifies the concept of precise governance of social media rumours. Furthermore, it summarizes the applications of advanced analysis technologies in social media rumour precise governance and provides insightful ways to achieve precise rumour governance. The literature review shows that advanced technology is very popular in the current rumour

check for updates

Citation: Guidi, B.; Iglesias C.A.; Rossetti, G., Koidl. K. Advanced Analysis Technologies for Social Media. *Appl. Sci.* **2023**, *13*, 1909. https://doi.org/10.3390/app13031909

Received: 11 January 2023
Accepted: 13 January 2023
Published: 1 February 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

research, and current research is mainly focused on three objects: the rumour, platforms and agencies, and the public. Furthermore, a framework based on these three research objects is proposed, and some advanced analysis technologies applied in rumour precise governance are summarized.

4. Toward a Standard Approach for Echo Chamber Detection: Reddit Case Study

In [3], the authors propose a general framework to identify echo chambers on Online Social Networks (OSNs) built on top of features they commonly share. The paper proposes a four-step pipeline which involves the identification of a controversial issue; the inference of users' ideology on the controversy; the construction of users' debate network; and finally, the detection of homogeneous meso-scale communities. The framework has been evaluated with a real case study on Reddit, covering the first two and a half years of Donald Trump's presidency. Results show that, even if users appear strongly polarized with respect to their ideology, most tend not to insulate themselves in echo chambers.

5. Analyzing the Effect of Negation in Sentiment Polarity of Facebook Dialectal Arabic Text

In [4], an approach to treat the negation issue and its effect on sentiment analysis is presented. The authors modify the classification used in their previous work, where they showed that the presence of a pattern could help determine the polarity of the post as positive, negative, dual neutral, or spam, with the introduction of negation. They use Facebook posts to study the effect of negating words on sentiment polarity of a post by highlighting a few challenges that hinder using negating terms directly as classification features. An improvement of 20% has been achieved after treating negation.

6. An Information Recommendation Technique Based on Influence and Activeness of Users in Social Networks

In [5], the authors propose an information recommendation technique that enables smart recommendations based on two specific types of analysis of user behaviours. The research methodology is as follows. First, the concepts of user influence and user activity in the context of social networks are explained, as well as their relationship with the information recommendation. Second, the core components that can define the concepts of user influence and user activity based on social network data are studied and applied to real individual social network data components. The authors use Yelp data to calculate the influence and activity of the users in a social network. Results provide the most influential users and the most active users. These users can closely represent the overall user ratings, which means that user influence and user activity can be used to efficiently estimate credible ratings given by influential users and active users in a social network.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Guidi, B. An overview of blockchain online social media from the technical point of view. *Appl. Sci.* **2021**, *11*, 9880. [CrossRef]
2. Du, X.; Ou, L.; Zhao, Y.; Zhang, Q.; Li, Z. Applications of Advanced Analysis Technologies in Precise Governance of Social Media Rumors. *Appl. Sci.* **2021**, *11*, 6726. [CrossRef]
3. Morini, V.; Pollacci, L.; Rossetti, G. Toward a Standard Approach for Echo Chamber Detection: Reddit Case Study. *Appl. Sci.* **2021**, *11*, 5390. [CrossRef]
4. Kaddoura, S.; Itani, M.; Roast, C. Analyzing the effect of negation in sentiment polarity of facebook dialectal arabic text. *Appl. Sci.* **2021**, *11*, 4768. [CrossRef]
5. Lee, M.; Oh, S. An Information Recommendation Technique Based on Influence and Activeness of Users in Social Networks. *Appl. Sci.* **2021**, *11*, 2530. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.