Guest Editorial Preface

Special Issue on Social Media and Networks for Multimedia Content Management (Part 1)

Sébastien Laborie, LIUPPA laboratory, University of Pau and Adour Countries, Bayonne, France

Phivos Mylonas, Department of Informatics, Ionian University, Corfu, Greece

Philippe Roose, LIUPPA laboratory, University of Pau and Adour Countries, Bayonne, France

Manolis Wallace, Knowledge and Uncertainty Research Laboratory, Department of Informatics and Telecommunications, University of Peloponnese, Tripoli, Greece

The Social Web and particularly Social Media data has grown considerably in the past few years. The use of a wide range of devices (smartphones, tablets, smartTV, IoT, etc.) to produce, store, view and exchange multimedia contents, and the « always-on » users connection to the Web continue to increase this phenomenon. Actually, through several devices, many famous sites offer to users to publish and to share on the Web multimedia contents (such as videos, photos, comments), to recommend and to connect those resources with their social audiences (e.g., friends, family, colleagues), to freely tag or annotate contents, and to evaluate with detailed statistics the popularity of a published data. For instance, Flickr and YouTube offer services for media publishing and sharing. Published contents can then be promoted and evaluated on the Facebook and Twitter platforms. Those platforms can be used anytime, anywhere and anyhow (i.e., with different devices, handled or not).

As a consequence, a huge amount of heterogeneous social media data can be generated, enriched and exploited for creating new research opportunities and challenges. As an example, information about some content creators and consumers with their related social contexts as well as the metadata associated to the media resources can be used by an adaptation process or a recommendation engine in order to personalize the way that some contents will be displayed.

In this Special Issue, we present original papers that tackle challenges or issues relating to exploit the social media and networks for multimedia content management, such as content annotation, document adaptation, information personalization and data recommendation. Four papers have been selected for this Special Issue and report the latest advances on the technologies, algorithms, models, standards and applications in such topics.

THE ARTICLES

The Call for Papers of the Special Issue received a strong response from various communities, including multimedia semantics, user modeling, personalization, artificial intelligence and multimedia analysis. High quality contributions addressing related theoretical and practical aspects were summoned and only a few papers were accepted following a rigorous two-stage review process, coordinated by the

guest editors. In the following, a short description of each paper is provided, summarizing the aims of each article and how the work described is related to the Special Issue topics.

The first paper of the Special Issue, entitled "*Museum Personalization Based on Gaming and Cognitive Styles: The BLUE Experiment*", prepared by *Yannick Naudet, Angeliki Antoniou, Ioanna Lykourentzou, Eric Tobias, Jenny Rompa and George Lepouras*, details and discusses experimental results obtained towards personalizing a museum visit through a personal mobile guide, using an approach relying on users' cognitive style, gaming, social networks, and recommendations. It describes the personalization system, which relies on a Facebook game to infer users' cognitive style, visiting style and interests, and a recommendation algorithm offering sequences of points of interests to visit. A qualitative and quantitative analysis of an experiment conducted in a museum is given, offering first conclusions and perspectives on the approach.

Adel Alti, Sébastien Laborie and Philippe Roose in "*A Community-Based Semantic Social Context-aware Driven Adaptation for Multimedia Documents*" present an approach to enhance users experience through the use of recommendations and social networks for on-the-fly (at runtime) adaptation of multimedia documents. They describe their CSSAP proposal, a dynamic service selection and assembly tool based on user and community profiles. The tool is based on community-aware semantic services and offers an architecture with three layers: semantic query, community management and semantic services. The most innovative characteristic of their contribution is that it profits from the potential of semantic representation techniques to express context constraints and community's interests that will be further used to generate and to manage complex dynamic adaptation processes. The proposed approach has been validated through a prototype for mobiles user of multimedia contents exchanges.

Andreas Menychtas, David Tomás, Marco Tiemann, Christina Santzaridou, Alexandros Psychas, Dimosthenis Kyriazis, Juan Vicente Vidagany Espert and Stuart Campbell in their paper "*Dynamic Social and Media Content Syndication for Second Screen*" present SAM, an innovative platform that combines social media, content syndication and targets second screen usage to enhance media content provisioning, renovate the interaction with end-users and enrich their experience. The notion of second screen TV usage appears more influential than ever, with viewers continuously seeking further information and deeper engagement while watching their favourite movies or TV shows. SAM incorporates modern technologies and novel features in the areas of content management, dynamic social media, social mining, semantic annotation and multi-device representation to facilitate an advanced business environment for broadcasters, content and metadata providers, and editors to better exploit their assets and increase their revenues.

Finally, the fourth paper of the issue entitled "*Predicting The French Stock Market Using Social Media Analysis* ", prepared by *Vincent Martin, Emmanuel Bruno and Elisabeth Murisasco* propose to predict using French tweets the next-day CAC40 french stock market index. Two analyses are applied on tweets: sentiment analysis and subjectivity analysis. Results of these analyses are then used to train a simple neural network. The input features are the sentiment, the subjectivity and the CAC40 closing value at day-1 and day-0. The single output value is the predicted CAC40 closing value at day+1. The authors propose an architecture using the JEE framework resulting in a better scalability and an easier industrialization. Their experiments were conducted over 5 months of data and the best run gives a direction accuracy of 80%.

As depicted by above contribution analysis, among the goals of this publication effort was to collect and report on recent high quality research that addresses the problem of exploiting social media and networks for multimedia content management; we believe that this Special Issue managed to demonstrate the broad diversity of state-of-the-art approaches, as well as the dynamics that hide within current semantic social media, a topic of active research. It is also clear that there is a lot to be gained by bringing both semantics and social research communities together and combining their approaches. Thus, we do hope that this Special Issue will form and contribute a small step towards this direction.

Finally, we would like to express our gratitude to the reviewers of this special issue for their valuable time: Harry Agius, Panos Alexopoulos, Ioannis Anagnostopoulos, Christos Anagnostopoulos, Fernando Bobillo, George Caridakis, Claudia d'Amato, Ernesto Damiani, Mario Doeller, Panagiotis

Sébastien Laborie
Phivos Mylonas
Philippe Roose
Manolis Wallace
Guest Editors
IJVCSN