Journal of Universal Computer Science, vol. 18, no. 4 (2012), 454-456
submitted: 16/2/12, accepted: 24/2/12, appeared: 28/2/12 © J.UCS

Advances on Social Network Applications

J.UCS Special Issue

Jason J. Jung
(Department of Computer Engineering
Yeungnam University, Gyeongsan, Korea
j2jung@{intelligent.pe.kr, gmail.com})

Przemyslaw Kazienko
(Wroclaw University of Technology
Wroclaw, Poland
Przemyslaw.Kazienko@pwr.wroc.pl)

Social networks have been one of the important issues in various domains, e.g., e-business [Jung 2012], and e-learning [Gan and Zhu 2007, Jung 2010]. In our computer systems, we have possibility to process data about interactions and activities of millions of individuals. Communication and multiple user technologies allow us to form large networks which in turn shape and catalyst our activities. Due to scale, complexity and dynamics, these networks are extremely difficult to analyze in terms of traditional social network analysis methods [Jung 2009a]. On the other hand, the data about human communication, common activities and collaboration simultaneously provide new opportunities for new applications [Jung 2008b, Jung 2008a].

This special issue is devoted to analysis of these large-scale social structures and what is more important to the identification of the areas where social network analysis can be applied to provide the knowledge that is not accessible for other types of analysis. Additionally, applications of social networks analysis can be investigated either from static or dynamic perspective. We seek for business and industrial applications of social network analysis that help to solve real-world problems. The area of social networks analysis and its applications bring together researchers and practitioners from different fields and the main goal of this special issue is to provide for these people the opportunity to share their visions, research achievements and solutions as well as to establish worldwide cooperative research and development. At the same time, we want to provide a platform for discussing research topics underlying the concepts of social network analysis and its applications by inviting members of different communities that share this common interest of investigating social networks.

The first paper in this issue, authored by Qinna Wang and Eric Fleury, proposes two methods (which are called clique optimization and fuzzy detection) to detect overlapping community structure. Clique optimization detects granular overlaps which are nodes have high togetherness with different communities. Fuzzy detection identified modular overlaps which are groups of nodes shared by several communities.

The second paper authored by John Boaz Lee et al. introduces an interesting scheme to understand social dynamics in online elections. The Wikipedia Request for Adminship (RfA) process has studied within the context of a social network and several factors influencing different stages of the voting process are pinpointed. This work has found that voters tend to participate in elections that their contacts have participated in.

In the third paper, Onur Can Sert et al. focus on multi-objective optimization problem. They assume all potential solutions belong to different experts and in overall and ensemble of solutions finally has been utilized for finding the final natural clustering. They have evaluated on categorical datasets and compared them against single objective clustering result in terms of purity and distance measure of k-modes clustering.

The fourth paper by JooYoung Lee et al. introduces two social network based algorithms that automatically compute 'author reputation' from a collection of textual documents. Firstly, keyword reference behaviors of the authors are extracted to construct a social network, which represents relationships among the authors in terms of information reference behavior. Then, by using the network, these two algorithms are applied to compute each author's reputation value.

The fifth paper by I-Hsing Ting et al. proposes an efficient method to understand the online users for assisting companies to enhance the accuracy and efficiency of the target market. A social recommendation system based on the data from microblogs is built according to the messages and social structure of target users. The similarity of the discovered features of users and products will then be calculated as the essence of the recommendation engine.

The sixth paper by Anna Zygmunt et al. focuses on identifying key persons, who are active in social groups in the blogosphere by performing various social network analysis. Mainly, two approaches are considered in the paper: (i) discovery of the most important individuals in persistent social communities and (ii) regular centrality measures applied either to social groups or the entire network.

This special issue has been achieved by a number of fruitful collaborations. We would like to thank the editor in chief of Journal of Universal Computer Science (JUCS), Hermann Maurer, for his kind support and help during the entire process of publication. This was possible thanks to the work of the renowned researchers that provided their anonymous reviews.

Finally, we are most grateful to the authors for their valuable contributions and for their willingness and efforts to improve their papers in accordance with the reviewers suggestions and comments.

References

[Gan and Zhu 2007] Gan, Y. and Zhu, Z.: A learning framework for knowledge building and collective wisdom advancement in virtual learning communities. *Educational Technology & Society*, 10(1):206–226, 2007.

[Jung 2008a] Jung, J.J.: Ontology-based context synchronization for ad-hoc social collaborations. *Knowledge-Based Systems*, 21(7):573–580, 2008.

[Jung 2008b] Jung, J.J.: Query transformation based on semantic centrality in semantic social network. *Journal of Universal Computer Science*, 14(7):1031–1047, 2008.

[Jung 2009a] Jung, J.J.: Contextualized query sampling to discover semantic resource descriptions on the web. *Information Processing & Management*, 45(2):283–290, 2009.

[Jung 2010] Jung, J.J.: Integrating Social Networks for Context Fusion in Mobile Service Platforms. *Journal of Universal Computer Science*, 16(15):2099-2110, 2010.

[Jung 2012] Jung, J.J.: Evolutionary Approach for Semantic-based Query Sampling in Large-scale Information Sources. *Information Sciences*, 182(1):30-39, 2012.