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Department of Medicine
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Channing Network Science Seminar

Sep 04, 2015, 11am @ 5th floor conference room

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Identifying and quantifying social influence in information propagation

Abstract: Social influence plays a key role in information propagation on social networks, such as message flows on Twitter. Identifying and predicting social influence is a fundamental task to uncover the universal laws governing the process of information propagation. Addressing the difficulty in distinguishing social influence and social selection, we develop a statistical method to identify whether social influence significantly affects information propagation, based on conditional independence tests with Bayesian networks. Predicting social influence requires understanding the temporal scaling which was inadequately investigated. We discover a temporal scaling that social influence decays with time latency in a personalized power-law manner. On real-world datasets we find that few individuals are identified with significant social influence and can be characterized with topological and behavioral features, and we validate the temporal scaling by accurately predicting information propagation.

Bio: Junming Huang is a visiting scholar in Center for Complex Network Research at Northeastern University, and an assistant researcher in CompleX Lab at University of Electronic Science and Technology of China. He received his PhD from Chinese Academy of Sciences, and worked for Microsoft Research Asia. He worked on citation networks and social networks, and recently started to analyze scientist careers.

References:

Junming Huang, Chao Li, Wen-Qiang Wang, Hua-Wei Shen, Guojie Li, Xue-Qi Cheng. Temporal scaling in information propagation. Scientific Reports 4, 5334; DOI:10.1038/srep05334 (2014)

Junming Huang, Xue-Qi Cheng, Hua-Wei Shen, Tao Zhou, Xiaoling Jin. Exploring Social Influence via Posterior Effect of Word-of-Mouth Recommendations. Proceedings of the Fifth ACM International Conference on Web Search and Data Mining (WSDM'12), Seattle, USA (2012).

hosted by Yang-Yu Liu