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Information Spreading on Social Networks

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Abstract

The dynamic propagation of various information may gradually disseminate, drastically increase, strongly compete with each other, or slowly decrease over social networks like Facebook and Twitter. In this talk, we present some analysis of the interrelation between two dynamic processes accounting for the information spreading, respectively preference and broadcasting. This scenario is representative of preference spreading on Facebook, and broadcast diffusing on Twitter. The same individuals joining both Facebook and Twitter constitute a multiplex network, where two diffusive processes are interacting thereby affecting each other. The analysis using a Markov chain approach reveals the phase diagram of the incidences in the two dynamic processes, which allows capturing the onset of the spreading threshold depending on the topological structure of the multiplex network and the interrelation between the two processes. Interestingly, considering various information diffusions, we could determine information dominance by controlling the information incidence and the topology of the multiplex network.

About the Speaker

Dong Yang received the B.S. degree from China Agricultural University in 2013. He is now a PhD candidate at the Department of Electronic Engineering, City University of Hong Kong. His research interests include complex networks, machine learning and data analysis, recently focusing on mathematical models for analyzing underlying mechanisms of social networks.