

Invited Talk

Computational Social Influence

Prof. Wei Chen

Senior Researcher at Microsoft Research Asia

Abstract

Social influence is deeply weaved into the fabric of human society and affects every aspect of human life. Computational social influence is aimed at empowering social influence with computational tools such as modeling, algorithm design, and data mining, so as to enable influence-based applications such as viral marketing, cascade detection, etc. In this talk, I will focus on the study of influence diffusion dynamics and the influence maximization problem, which is the problem of selecting a small number of seed nodes in a social network such that their influence coverage after the influence diffusion process is maximized. I will first survey recent developments in influence maximization including scalable influence maximization and competitive influence maximization, and then introduce as an example our latest work on amphibious influence maximization, which aims at combining traditional marketing with viral marketing and addresses the technical issue of how to deal with non-submodular cases in influence maximization. I will conclude the talk with some discussions on future directions in computational social influence.



Biographical Sketch

Wei Chen is a Senior Researcher at Microsoft Research Asia, Beijing, China. He is also an Adjunct Professor at Tsinghua University and a Guest Researcher at the Institute of Computing Technology, Chinese Academy of Sciences. His research interests include social and information networks, networked game theory and economics, online learning, distributed computing, and fault tolerance. He, together with his colleagues, has initiated the study of scalable influence maximization, which has been widely cited and followed upon, and the proposed algorithms such as PMIA, LDAG, and IRIE have been widely used as the state-of-the-art in influence maximization research. He has also done a series of work on modeling complex influence diffusion dynamics (such as competitive diffusion) and their optimization tasks. He has coauthored a monograph "Information and Influence Propagation in Social Networks" in 2013, which systematically summarizes recent advances in computational social influence research.

Wei Chen won the prestigious William C. Carter Award in 2000 in the area of dependable computing, for his seminal dissertation work on the quality of service of failure detectors. His co-authored paper on a novel game-theoretic approach for community detection in social networks won the best student paper award in ECML PKDD 2009. He regularly serves as program committee members in top international data mining and data management conferences, such as KDD, WSDM, SDM, SIGMOD, ICDE, WWW, etc. He is a member of the Big Data Task Force of Chinese Computer Federation. Wei Chen obtained a Bachelor and Master degree from Department of Computer Science and Technology, Tsinghua University, and a Ph.D. from Department of Computer Science, Cornell University in 2000.