



CINET Workshop Keynote Speaker - Dr. Boleslaw K. Szymanski

9:30 am
Tuesday, August 11, 2015
Keynote Speaker: [Dr. Boleslaw K. Szymanski](#)
Campus Center Assembly Hall
University at Albany - SUNY (Uptown Campus)
Albany, NY 12222



Title: Dynamics of Spread of Opinions in Social Networks

Abstract. Human behavior is profoundly affected by the influenceability of individuals and their social networks. We discuss the dynamics of spread of opinions in such networks using two fundamental models for social contagion: the binary agreement model (influencing with committed minorities) and the threshold model (spreading via threshold contact process). In the first model all individuals initially adopt either opinion A or B, and change it after repeated interactions with other opinion holders. A small fraction of all individuals commits to their opinions and is immune to influence. We show that the prevailing majority opinion in a population can be rapidly reversed by a small fraction of randomly distributed committed individuals. When committed individuals exist for both opinions, the difference between larger and smaller fractions of them needed for rapid majority conversion decreases as the smaller minority increases. The results are relevant in understanding and influencing the social perceptions of ideas and policies and spread of innovation.

The threshold model encapsulates spread of innovation. Using it, we study the impact of clustering on system dynamics and the strategies of finding efficient initial spreaders. Network structure, in particular clustering, plays a significant role in this model. We find that even for arbitrarily high value of threshold, there is a critical fraction of initiator beyond which the cascade becomes global. Similarly to the case of single-node or single-clique initiators studied previously, we observe that community structure within the network facilitates opinion spread compared to homogeneous random networks. Finally, we study the efficacy of different initiator selection strategies on the size of the cascade and the cascade window.

Speaker's Biosketch. *Dr. Boleslaw K. Szymanski is the Claire and Roland Schmitt Distinguished Professor of Computer Science and Cognitive Science at RPI. He is the Director of the ARL Social and Cognitive Networks Academic Research Center. He received his Ph.D. in Computer Science from National Academy of Sciences in Warsaw, Poland, in 1976. He published over 300 scientific articles, is a foreign member of the National Academy of Science in Poland and an IEEE Fellow and was a National Lecturer for the ACM. In 2009, he received the Wilkes Medal of British Computer Society and in 2003, the Willey Distinguished Faculty Award from RPI. His current research interests focus on computer networks and technology-based social networks.*

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