UNIVERSITY OF CENTRAL FLORIDA
CENTER FOR RESEARCH IN COMPUTER VISION

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"Can a simple 1D equation Predict Consensus Times and Tipping Points in Large Signaling Networks?"
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ABSTRACT

The high volume of recent work reported on signaling games on large networks motivated our search for unifying principles that can predict long times properties of these network games. Amongst these is the search and successful discovery in many cases of simple scalar (1D) equation that can in principle yield exact closed form solutions to important questions in complex network dynamics. In this talk I will outline how such unifying simple equations can be derived for what appears to be very complex models on large networks such as the binary opinion Naming Games to answer questions such as first passage times, expected consensus times, or total synchrony times.

For very large populations, the mean field approach has been extended deterministically to the Naming Games on Erdos -Renyi random graphs but for small crowds such as those relevant to swarming and observed by methods developed at UCF, the scalar equation should be an SDE.

BIOGRAPHY

Professor Chjan Lim received his PhD in Applied Math from Brown University in 1987 and a BSE degree with high honors from the School of Engineering Princeton University in 1982. He was an assistant professor for two years at the U of Michigan and a postdoctoral fellow at the IMA University of Minnesota Minneapolis before joining RPI in 1989. He was promoted to associate and then full professor in Math Sciences in 1993 and 2002. He has also been an active visitor at NUS, NTU, and the University of Malaya.

His current research funded by the ARO is on several unifying aspects of network science including expected times to synchrony and tipping points of committed nodes in large random networks. He is also currently working on problems in swarming and crowds where demographic noise is relevant.