

The Dr. A. Louis Medin M&S Seminar Series



Social-Media-Based Cyber Security: Cases on Transnational U.S. Border Security

Presented by: Wingyan Chung, Ph.D.

Friday, June 19, 2015 | 1:00pm – 2:00pm | Partnership III Building, Room 233

Presentation Overview

Social media provide opportunities for policy makers and security professionals to gauge public opinion and to track security breaches. However, the rapidly growing volumes and variety of expressions on social media have challenged traditional policy analysis, cyber security tracking, and public sentiment assessment. In this presentation, we review previous research in cyber security and describe a research framework for social-media-based cyber security informatics. We present three cases of using the framework in the context of transnational U.S. border security. First, we describe an intelligent system called "iMood" that analyzes sentiment and network relationships of over 300,000 Twitter users who posted 909,035 tweets about U.S. border security. Second, we present a social network approach to studying the propagation of over 180,000 tweets to identify influential leaders and activists in U. S. border security. Third, we examine emotion extraction and entrainment of 105,304 users who posted 189,012 tweets to compare two methods of identifying influential leaders. We believe that the research provides strong implication for policy and technology developments on cyber security, offers insights on human behavior in large-scale social media networks, and contributes to design-science research and practice for the computing and information systems communities.

Speaker Biography

Dr. Wingyan Chung received his Ph.D. in Management Information Systems from The University of Arizona (UA) and an M.S. and B.B.A. from The Chinese University of Hong Kong. His scholarly interests and expertise include business intelligence, social media analytics, security informatics, data/text/Web mining, simulation, visualization, knowledge management, and human-computer interaction. His research addresses information overload, security issues, and knowledge management in organizations by designing, developing and evaluating new IT solutions. He has published over 80 refereed articles in *Journal of Management Information Systems*, *Communications of the ACM*, *Journal of Medical Internet Research*, *IEEE Computer*, *International Journal of Human-Computer Studies*, and *Decision Support Systems*, among others. Dr. Chung is ranked among Top 20 researchers globally in business intelligence and analytics (*MIS Quarterly* 36:4). His publications were downloaded over 6,900 times at *ACM Digital Library* and received over 2,000 citations at *Google Scholar*. He is currently an associate professor in business analytics at Stetson University. His previous affiliations include visiting scholar at the University of Arizona's BORDERS Center, scholar of the Center for Defense and Homeland Security at UNC Fayetteville State University, and project leader of the COPLINK Center and of the Dark Web Project at the UA Artificial Intelligence Lab. Dr. Chung has received multiple honors and awards, such as the DARPA Young Investigators Initiative Award, Outstanding Researcher Award, NSF research grants, DHS summer research grant, Best Research Paper Award, and Outstanding Performance Award. Dr. Chung serves as an associate editor for the *Journal of Information Privacy and Security* and a co-PI for the NSF-funded projects titled "Living in the Knowledge Society" and "Computing in Context," for which he hosted several workshops to develop new pedagogies and curricular modules for computing and analytics education.

Named in recognition of former director Dr. Medin's contribution to IST, UCF and Modeling and Simulation, this series of seminars features authorities on the theory and practice of M&S, with special emphasis on topics that show how to bring theory into practice.

Speakers are experts from throughout the simulation community, including academia, government and industry.

Seminars at IST are free and open to the public.