UCF DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCEINCE

Fall 2015 Seminar Series

Presented by the CS Division

SOCIAL-MEDIA-BASED CYBER SECURITY: CASES ON U.S. BORDER SECURITY

FRIDAY SEPTEMBER 4, 2015

11:00 AM – HEC 450

Social media provide opportunities for policy makers and security professionals to gauge pubic 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. In each case study, we discuss collaboration opportunities, possible educational developments, and research directions. 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 information systems communities.

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Dr. Wingyan Chung is a Research Associate Professor at the Institute for Simulation and Training at University of Central Florida. He received his Ph.D. in Management Information Systems from The University of Arizona, and an MS and BBA from The Chinese University of Hong Kong. His scholarly interests and expertise include business intelligence, social media analytics, cyber security, data/text/Web mining, knowledge management, and human-computer interaction. More information about him is available at http://borders.us.to/wchung. Contact him at wchung@ucf.edu.

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