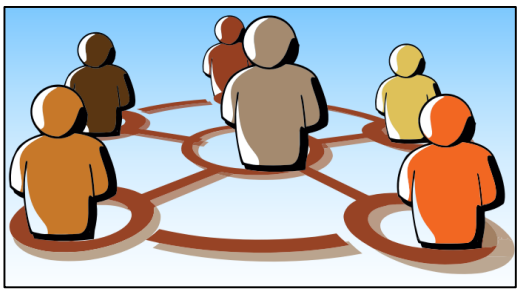
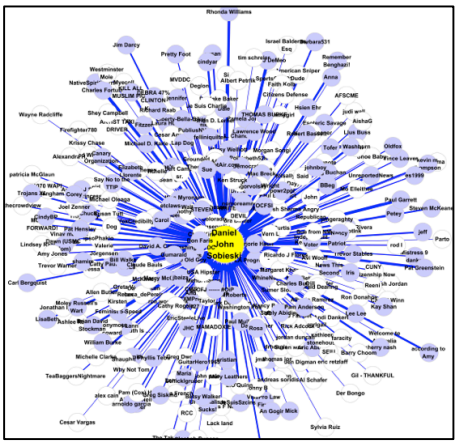
Cyber Intelligence Lab

The Cyber Intelligence (CI) Lab at the UCF Institute for Simulation and Training focuses on basic and applied research in intelligence informatics, cybersecurity, social media analytics, network science, data and text mining, modeling and simulation, and human-computer interaction. The CI Lab has the capabilities of modeling the human in cybersecurity, social-media-based cyber-situational understanding, and intelligent information gathering and analysis.

Modeling the Human in Cybersecurity



Human behavior and emotion play an important role in the cyber domain and in shaping policy decisions. This stream of research seeks to develop new techniques for analyzing emotion and understanding human behavior in the cyber domain. The results have implications for policy making, cyber intelligence analysis, and decision support.



Social-Media-based Cyber-Situational Understanding

Social media analytics and network science are increasingly applied to cybersecurity and intelligence analysis. We are developing a new class of social media analytics techniques and systems that incorporate advanced analytics and models to extract and analyze user opinion from voluminous social media data. Ongoing works include analyzing social media discussions on border security and immigration issues, and helping organizations to identify opinion leaders and activists in social media discussion network. Novel applications of social media include enhancing critical infrastructure resilience and supporting health informatics.

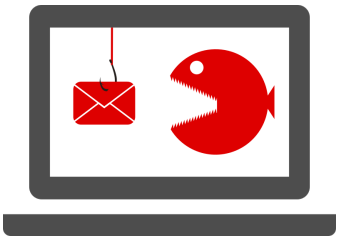
Cyber-Intelligence Informatics, Modeling, and Simulation

The volume, velocity, and variety of data useful in the cyber domain are growing rapidly. New techniques and systems are needed to assist in intelligent analysis, modeling, and simulation of

cyber phenomena. This stream of research develops new theories, approaches, and technologies for analyzing and visualizing big data in the cyber domain.

Vulnerability Assessment and Threat Mitigation of Cyber-Physical Systems

Cyber-physical systems (CPS) are increasingly used in the military and civilian domains. Their security is also of increasing concern. This stream of research is developing new techniques, metrics, and systems to automatically assess and to mitigate vulnerabilities of CPS. Ongoing works include developing relevant framework and tools in the context of mission-critical CPS.



About UCF and IST

Nationally renowned faculty, pioneering research and a student-centered approach to learning have cemented University of Central Florida (UCF) as a center for academic excellence, attracting students from all 50 states and 138 foreign countries. UCF ranks among the most innovative universities in the U.S., according to *U.S. News & World Report's Best Colleges 2016* guide. UCF's Institute for Simulation and Training (IST) is one of the nation's leading research centers for simulation, training, modeling, virtual, augmented and mixed reality research for both defense and commercial applications. Founded in 1982, IST is one of the nation's leading research centers in modeling and simulation, and is a research arm of the UCF. IST employs more than 260 full-time researchers, support personnel and student interns. IST's laboratories, workspace and administrative offices occupy more than 80,000 sq. ft. at its three Central Florida Research Park locations, the Partnership II and III buildings and the Simulation Training Technology Center. Large portions of the institute's facilities are configured as laboratories and research workspace.

Opportunities to Partner with Cyber Intelligence Lab

Many opportunities exist for Ph.D. students, post-doctoral researchers, graduate and undergraduate students, and government and industry entities to partner with the CI Lab. If you are interested, please email your information to:

Wingyan Chung, Ph.D.
Associate Professor, Institute for Simulation and Training
University of Central Florida
IST Website: http://www.ist.ucf.edu/
Email: wchung@ucf.edu
Phone: +1 (407) 882-1435
Chung's Website: http://pegasus.cc.ucf.edu/~cyber/wchung