Title: Advanced Statistical Modeling for Image Forensics

Abstract: Information forensics and security have become crucially important to our modern society. The research along this line has been moved ahead quickly while many challenges remain to be solved. Using digital images as a concrete medium, we take a look in this talk at the recent developments in steganalysis, which can clearly demonstrate the critical role played by the advanced statistical modeling. While the conflicting between steganography and steganalysis is endless, our knowledge about the statistical modeling moves ahead; which also benefits other forensic researches. Furthermore, the new development in researches on texture classification and face recognition are discussed; some novel works are briefly introduced.

Speaker: Dr. Yun Qing Shi has joined the Electrical and Computer Engineering Department at the New Jersey Institute of Technology (NJIT), USA since 1987, and is currently a professor there. He obtained his B.S. degree and M.S. degree from the Shanghai Jiao Tong University, China; his Ph.D. degree from the University of Pittsburgh. His research interests include multimedia data hiding, forensics and security, visual signal processing and communications, applications of image processing, computer vision and pattern recognition to industrial automation and biomedical engineering, theory of multidimensional systems and signal processing. Prior to entering graduate school, he had industrial experience in a radio factory as a principal design and test engineer in numerical control manufacturing and electronic broadcasting devices. Some of his research projects have been supported by several federal and New Jersey State funding agencies. He is an author/coauthor of more than 300 papers, a book on Image and Video Compression, five book chapters; an editor of 16 books and proceedings. He holds 28 US patents. In addition to paper presentation in workshops/conferences, he has delivered more than 108 invited talks around the world and 18 three-hour tutorials, was a Distinguished Lecturer of IEEE CASS, and is currently a Distinguished Lecturer of ASPIPA (Asia-Pacific Signal and Information Processing Association). At NJIT, he has guided 16 Ph.D. and 30 M.S. students, and hosted 25 visiting scholars. He obtained Innovators Award 2010 by New Jersey Inventors Hall of Fame for Innovations in Digital Forensics and Security. His US patent 7,457,341 entitled "System and Method for Robust Reversible Data Hiding and Data Recovery in the Spatial Domain" won 2010 Thomas Alva Edison Patent Award by Research and Development Council of New Jersey. He is a fellow of IEEE since 2005 for his contribution to Multidimensional Signal Processing.

Distinguished Lecturer of ASPIPA (Asia-Pacific Signal and Information Processing Association)