**COLLOQUIUM**

Department of Computer Science and Engineering

University of South Carolina

### **Making Sense of Sensing**

### **Jiangying Zhou**

### Information Sciences Division

### Teledyne Scientific

Date: **April 25, 2014**

Time: **1600-1700 (4pm-5pm)**

Place: **Swearingen 1A03 (Faculty Lounge)**

# Abstract

How do you recognize a friend walking at a distance when you cannot see his/her face? Driving down a busy intersection, why do you not try to identify each and every individual vehicle or person? The receptor cells in your eyes and the light-sensitive elements of a digital camera record nothing but a mottled pattern of colors flickering as a function of space and time. Making sense of the world from these sensory inputs involves solving extraordinarily difficult recognition problems in real-time.

Human and computers both apply sophisticated computing to make sense of senses. At Teledyne, we conduct cutting-edge research to understand how higher-level concepts such as visual shapes emerge in our brain from senses, and to develop advanced algorithms that can extract useful information that the real world presents to us via sensors. In this talk, I will highlight some of the work that we do on this fascinating topic, the challenges we face, and the exciting opportunities that are awaiting future researchers.

**Dr. Jiangying Zhou** is a Senior Technical Manager in the Information Sciences Division at Teledyne Scientific, where she manages and leads a group of scientists pursuing contract R&D projects from government agencies as well as commercial customers. Dr. Zhou was the PM for Teledyne's FITT Program (DARPA, 2011-2013), and PM/PI of the seismic data analysis program (2009-2013). Prior to joining TS&I, Dr. Zhou was the director of R&D of Summus Inc., a small start-up company specializing in contract engineering projects for U.S. Department of Defense and commercial markets in the areas of video and image compression, pattern recognition, and computer vision. While at Summus, Dr. Zhou was the lead investigator of several research projects funded by the Office of Naval Research on side-scan-sonar image analysis. From 1993-1998, Dr. Zhou was a scientist at Panasonic Technologies, Inc., Princeton, NJ, where she conducted research in the areas of document analysis, hand-drawn gesture recognition, image analysis, and information retrieval. Dr. Zhou obtained her Ph.D. in Electrical Engineering at the State University of New York, Stony Brook, in 1993. Dr. Zhou is the author of more than 30 technical papers in refereed journals and conferences and the co-inventor of twelve U.S. patents. Dr. Zhou was an Associate Editor of the SPIE Optical Engineering from 2001 to 2005 and Chair of SPIE/IS&T: EI Document Analysis Conference from 1998 – 1999. Jiangying Zhou is a member of IEEE society.