



# ELECTRICAL & COMPUTER ENGINEERING SEMINAR

## “Agile Sensing Systems: Analysis, Design and Implementation”

by

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Electrical and Computer Engineering  
University of Denver

Tuesday, February 7, 2012, 11:00 a.m.  
Lory Student Center Room 214

**Abstract:** The major feature of agile sensing systems is the adaptation of their sensing and processing strategies to system goals, such as performance requirements, computational complexity requirements, and robustness to time-varying physical environments. Agile sensing techniques thus enable systems to become autonomous, efficient, and reliable. This talk will discuss the analysis, design and implementation of several agile sensing systems. In particular, agile sensing techniques are demonstrated in 1) the design and performance of a waveform-agile multi-modal track-before-detect sensing system, 2) MIMO radar processing for time-varying multipath urban environments, 3) efficient algorithm design using compressed measurements in multi-sensor-multi-target tracking of neural activities and its FPGA Implementation, and 4) active sensing and learning for structural health monitoring applications.

**Biography:** Dr. Jun Jason Zhang is currently an Assistant Professor in the Department of Electrical and Computer Engineering at the University of Denver. He was with the School of Electrical, Computer and Energy Engineering at Arizona State University from 2009 to 2011 as an Assistant Research Scientist. He received his Ph.D. degree in Electrical Engineering from Arizona State University, Tempe, Arizona in 2008, and M.E. and B.E. degrees in Electrical Engineering from Huazhong University of Science and Technology, Wuhan, China, in 2005 and 2003, respectively. His research interests and expertise are in the areas of Adaptive Sensing and Processing, Time-varying Environment Modeling, Adaptive Sensing

and Embedded Implementation for Biomedical Applications, Structural Health Management, and Biological Threat Detection. Dr. Zhang has worked on projects in these areas from agencies including National Science Foundation (NSF), Air Force Office of Scientific Research (AFOSR), National Aeronautics and Space Administration (NASA), and Defense Advanced Research Projects Agency (DARPA).

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