

## **Topic: Ultra-Low Power Design and Neuromorphic Computing**

Wearable electronics, intelligent devices, medical electronics, and more recently internet of things (IoT) are dramatically changing the way we experience life by providing rich information about our activities, health, and the environment. To be truly ubiquitous, these devices must be energy autonomous and ultra-low power using the little energy available to it for computation.

In this talk Professor Yuan is going to present research topics in ultra-low power mixed-signal ADC designs for IoT and wearable electronics as well as bio-inspired neuromorphic circuits for ultra-low power applications. Unsupervised learning using spiking time dependent plasticity (STDP) neurons and resistive RAM synapses including stochastic behavior will also be presented.

**Jiann-Shiun Yuan** received the M.S. and Ph.D. degrees from the University of Florida, Gainesville, in 1984 and 1988, respectively. In 1988 and 1989 he was with Texas Instruments Incorporated for CMOS DRAM design. Since 1990 he has been with the faculty of the University of Central Florida (UCF), Orlando, where he is currently a Professor and Director of NSF Multi-functional Integrated System Technology (MIST) Center. He is the author of three textbooks and more than 300 papers in journals and conference proceedings. He has supervised twenty-three Ph.D. dissertations, thirty-four M.S. theses, and five Honors in the Major theses at UCF. Since 1990, he has conducted many research projects funded by the National Science Foundation, Intersil, Jabil, Honeywell, Northrop Grumman, Motorola, Harris, Lucent Technologies, National Semiconductor, and the state of Florida. He is currently supervising eight Ph.D. students and one master student for research.

Dr. Yuan is a member of Eta Kappa Nu and Tau Beta Pi. He is a founding Editor of the IEEE Transactions on Device and Materials Reliability and a Distinguished Lecturer for the IEEE Electron Devices Society. He was the recipient of the 1996, 2004, 2010, and 2015 Teaching Award, UCF, the 2003 Research Award, UCF, the 2003 Outstanding Engineering Award, IEEE Orlando Section, and the Excellence in Research Award at the full Professor level, the College of Engineering and Computer Science at UCF in 2015. He was awarded as the Pegasus Professor, highest academic honor of excellence at UCF, in 2016.

