

ECE Distinguished Lecture Series



Dr. David Blaauw

Professor in Electrical Engineering and Computer Science
at the University of Michigan
Director of the Michigan Integrated Circuits Laboratory
IEEE Fellow

The Internet of Tiny Things (IoT²): Challenges and Opportunities in mm-Scale Computing

Monday, December 3, 2018, 11:30 am - 12:30 pm

Location: SEH B1220

Abstract

The internet of things (IoT) is a rapidly evolving application space, poised to become the largest electronics market for the semiconductor industry. One of the fascinating new fields in the IoT research is mm-scale sensors that are poised to open up a myriad of new application domains. Enabled by the unique characteristics of cyberphysical system and recent advances in low power design, mm-scale sensors are rapidly becoming a reality. In this presentation, we will survey the challenges and solutions to mm-scale design, highlighting particularly low power circuit issues ranging from low power SRAM and miniature neural network accelerators, to radio communication protocols and analog interfaces. We will discuss system level challenges unique to such small systems which are too small to allow for any external electrical connections and illustrate several complete systems and their emerging application spaces.

Biography

David Blaauw is a Professor in Electrical Engineering and Computer Science at the University of Michigan. He has published over 550 papers and holds over 60 patents. His work has focused on VLSI design with particular emphasis on ultra-low power and high performance design for miniature sensor nodes. Before joining the University in 2001, David worked for Motorola, Inc. in Austin, TX, where he was the manager of the High Performance Design Technology group. He received his B.S. in Physics and Computer Science from Duke University in 1986, and his Ph.D. in Computer Science from the University of Illinois, Urbana, in 1991. David was the Technical Program Chair and General Chair for the International Symposium on Low Power Electronic and Design. He was also the Technical Program Co-Chair of the ACM/IEEE Design Automation Conference. He is a member of the ISSCC Technical Program Committee, analog subcommittee. He is an IEEE Fellow and the director of the Michigan Integrated Circuits Laboratory.