Speaker: John Tsitsiklis - Professor of Electrical Engineering, MIT
Date: Tuesday, February 5th
Time: 4:30pm
Room: B205 - Equad
Title: Decentralized Detection with a Tree of Sensors

Abstract: We discuss issues related to decentralized detection in a network of distributed sensors. While many approaches to the problem are intractable, considerable simplifications are possible in the limit of a large number of sensors. After some brief history and background, we focus on tree networks and address architectural questions by comparing the performance of different trees, quantified by the corresponding error exponents. Somewhat surprisingly, we show that under certain assumptions, a tree architecture performs as well as a star configuration. (Joint work with Wee Peng Tay and Moe Win.)

Bio: John N. Tsitsiklis received the B.S. degree in Mathematics (1980), and the B.S. (1980), M.S. (1981) and Ph.D. (1984) degrees in Electrical Engineering, all from the Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A. During the academic year 1983-84, he was an acting assistant professor of Electrical Engineering at Stanford University, Stanford, California. Since 1984, he has been with the department of Electrical Engineering and Computer Science at the Massachusetts Institute of Technology, where he is currently a Clarence J Lobel Professor of Electrical Engineering. He has served as acting co-director of the MIT Laboratory for Information and Decision Systems (Spring 1996 and 1997), and as a co-director of the Operations Research Center (2002-2005). His research interests are in the fields of systems, optimization, control, and operations research. He has coauthored four books, more than 100 journal papers, and is named as co-inventor in seven awarded U.S. patents. He has been a recipient of an IBM Faculty Development Award (1983), an NSF Presidential Young Investigator Award (1986), an Outstanding Paper Award by the IEEE Control Systems Society (1986), the M.I.T. Edgerton Faculty Achievement Award (1989), the Bodossaki Foundation Prize (1995), and the INFORMS Computer Science Technical Section prize (1997). He is a Fellow of the IEEE (1999) and of INFORMS (2007). In 2007, he was elected to the National Academy of Engineering. Finally, he is a member of the National Council on Research and Technology in Greece.