SEMINAR

Smarter Energy: The Promise of Cyber-Physical Systems

Monday, August 15, 2011
3:30 – 4:30P
EIT 3142

Presented by the Waterloo Institute for Sustainable Energy
University of Waterloo

Shivkumar Kalyanaraman, IBM

This talk will review how the climate change problem is linked to the fossil-fuel energy problem and overview various options for sustainable energy and their relative contributions. We then discuss smarter energy (including smart grids), and how sensing, networking, real-time analytics, actuation and control come together in a "cyber-physical" system. The talk will discuss key IBM commercial and research initiatives worldwide (including IBM Research – India) ranging from smart grid tomography in Australia, microgrids in remote rainforests of Brunei, next-gen smart grid pilots in the USA, unified grid/water management in Malta, integration of fickle wind energy and plug-in hybrid electric vehicles (PHEV) in Denmark, context-sensitive "smart" demand-response systems for residential use, and context-harvesting in commercial buildings for energy management.

Shivkumar Kalyanaraman is a STSM (Sr Tech Staff Member) and Senior Manager of the Next Generation Systems & Smarter Planet Solutions Department at IBM India Research Labs, Bangalore. He was previously a Manager of the Next Generation Telecom Research group and a Research Staff Member since 2008. He was a full Professor at the Department of Electrical, Computer and Systems Engineering at Rensselaer Polytechnic Institute in Troy, NY. He received a B.Tech degree in Computer Science from the Indian Institute of Technology, Madras, India in July 1993, followed by M.S. and Ph.D. degrees at Ohio State University in 1994 and 1997 respectively. He also holds an Executive M.B.A. (EMBA) degree from Rensselaer Polytechnic Institute (2005). His current research in IBM is at the intersection of emerging wireless technologies and IBM middleware and systems technologies with applications to large-scale smarter planet problems (grids, traffic, finance etc.). He was selected by MIT's Technology Review Magazine in 1999 as one of the top 100 young innovators for the new millennium. He served as the TPOC Co-chair of IEEE INFOCOM 2008, and General co-chair of ACM SIGCOMM 2010 in New Delhi. He is on the editorial board of IEEE/ACM Transactions of Networking. He is a Fellow of the IEEE and an ACM Distinguished Scientist.

For more information please contact Catherine Rosenberg | ext. 84510 | cath@uwaterloo.ca