

Smart Energy: Ubiquitous Role of Embedded Systems

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Abstract

Smart grids have been heralded as the key enabler of cleaner, cheaper and more reliable energy. They incorporate diverse energy sources, advanced monitoring, demand-side management and the ability to “self heal” . The success of smart grids lies in the development of effective solutions for a) Demand-supply management incorporating intermittent, renewable, energy sources; b) Monitoring and sensing to understand energy generation and consumption patterns; and c) Distributed information management and control strategies. The talk will cover these topics and show how Embedded Systems play a crucial role in addressing these problems.

Biography

After his B.Tech (Electrical Engineering) and M.Tech (Computer Science) degrees from IIT Madras, Prof. Krithi Ramamritham went on to receive his Ph.D. in Computer Science from the University of Utah. After a long stint at the University of Massachusetts, he moved to IIT Bombay as the Vijay and Sita Vashee Chair Professor in the Department of Computer Science and Engineering. During 2006–2009, he served as Dean (R&D) at IIT Bombay.

Prof. Ramamritham's research explores timeliness and consistency issues in computer systems, in particular, databases, real-time systems, and distributed applications. His recent work addresses these issues in the context of sensor networks, embedded systems, mobile environments and smart grids. During the last few years he has been interested in the use of Information and Communication Technologies for creating tools aimed at socio-economic development.

Prof. Ramamritham is a Fellow of the IEEE, ACM, Indian Academy of Sciences, National Academy of Sciences, India, and the Indian National Academy of Engineering. Twice he has received the IBM Faculty Award. He is also a recipient of the Distinguished Alumnus Award from IIT Madras and the Doctor of Science (Honoris Causa) from the University of Sydney.

Prof. Ramamritham has been associated with the editorial board of various journals. These include IEEE Embedded Systems Letters and Springer's Real-Time Systems Journal (Editor-in-Chief), IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Mobile Computing, IEEE Internet Computing and the VLDB (Very Large Databases) Journal. Moreover, he has served on the Board of Directors of Persistent Systems, Pune, on the Board of Trustees of the VLDB Endowment, and on the Technical Advisory Board of TTTech, Vienna, Austria, Microsoft Research India, and Tata Consultancy Services.

Of the two startups that he has co-founded, Agrocom offers award-winning information and communication technology-based real-time decision-support tools to farmers and organizations

enabling progressive farming while Nex Robotics delivers high quality products in robotics and embedded systems.