Research Seminar

Software Design for Energy Harvesting IoT Devices

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Date : 24 February 2021 (Wednesday)
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► Abstract

More and more future IoT devices will rely on energy harvesters (such as solar panel) to power themselves. There are two reasons for this trend: first, as many IoT devices are deployed in complex working environments, charging these devices will become very difficult or impossible; second, to reduce the impact to the environment, batteries in some of the IoT devices may be removed. As energy harvested from the ambient environment is generally very unstable, a device may experience frequent power failures during its lifetime. This introduces new challenges to logical correctness and execution efficiency of the software running on such devices. In this seminar, I will present the challenges in the software design of energy harvesting IoT, and some of our recent work to solve the problems.

► About the Speaker

Dr Mingsong Lyu received his Bachelor's, Master's and PhD degrees from Northeastern University, China, in 2002, 2005 and 2010 respectively. His research interests include green computing in IoT (energy management and energy-harvesting systems) and real-time systems (real-time operating systems and timing analysis). He has published papers in conferences and journals in the embedded computing and IoT domain, including RTSS, EMSOFT, e-Energy, DATE, ACM TECS and IEEE TCAD. He received the Best Paper Award of Design, Automation and Test in Europe Conference (DATE) in 2013.

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