

SEMINAR NOTICE:

Human-Centric Building Energy Management for Smart Grid : Cyber-Physical System (CPS) Approach.

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3:00 p.m.
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Abstract:

The deregulation of electricity markets and the increasing requirements for greener operation are creating an imminent need for a new breed of Cyber-Physical Systems (CPS) that closely coordinate generation and consumption. Buildings are a crucial element for such coordination in smart grid to promptly recover imbalance between demand and supply in electricity market by dynamically modulating their energy consumption to market signals. Unfortunately, such fine-grained control of building energy consumption are not yet successful partially due to the lack of the computational framework to handle many heterogeneous components, that include human, in buildings. To address the problem, we are developing a middleware framework, with concomitant algorithms, that achieve a close human-IT coupling to bring about energy savings in green, smart-grid connected buildings without compromising the functional effectiveness of these buildings. In this talk, I will focus on our preliminary work to retrieve energy usage information leveraging multimodal heterogeneous sensors deployed in buildings in a distributed manner.

Biosketch:

Dr. Deokwoo Jung is a Research Scientist at Advanced Digital Science Center (ADSC). Prior to joining ADSC, he was a Postdoctoral Associate in the Electrical Engineering department at Yale University, leading an interdisciplinary research project for intelligent buildings with the Yale Climate and Energy Institute (YCEI). His research interest broadly lies in embedded computing systems, wireless network, signal processing, and optimization for scalable and distributed sensing and computing systems. Dr. Jung received his Ph.D. in Electrical Engineering from Yale University in 2010. He also earned an M.S. from the University of Michigan Ann Arbor and a B.S. from Yonsei University.

