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Decision Making for IoT-Enabled Smart Buildings and Smart Cities – An Event - Based Method

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ABSTRACT:
Internet of Things (IoT) have been changing our daily life in the past few years. The huge amount of sensors in IoT generate big data and provide opportunities to make many systems smarter. However, the decision making in these IoT-enabled systems also face ordinary challenges such as the curse of dimensionality and modeling and the new challenges such as multi-scale, multi-objective, and high uncertainty. In this talk, we introduce an event-based method in which the decision making is triggered by events while not states or time. This new feature substantially reduces the computational load while may still provide good system performance. We consider the application of this event-based method for IoT-Enabled smart buildings and smart cities, both for energy saving and for fast evacuation. We hope this work sheds light to the optimization of IoT systems in general.

Short Bio:
Qing-Shan Jia received the B.S. degree in automation in July 2002 and the Ph.D. degree in control science and engineering in July 2006, both from Tsinghua University, Beijing, China. He is an Associate Professor in the Center for Intelligent and Networked Systems (CFINS), Department of Automation, Tsinghua University, where he currently serves as the associate director.

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