**Conclusion**

In this paper, a novel method for automating energy-efficient smart homes based on activity awareness was introduced. Initial experimental results indicate that real-time activity recognition and device usage profiling can provide effective mechanisms for turning off unneeded devices and thereby reducing energy consumption. This work is just a first step in utilizing activity awareness for home automation. Reliable home automation depends heavily on reliable activity recognition, which is continuing to be refined. As this capability becomes more robust, more control may be given to CARL. This control will include turning devices on as well as off. Future work will also explore the creation of machine learning techniques to time various activities (i.e., washing clothes) for ideal conditions (e.g., when renewable or low-cost energy is available) and to automate alternative activity supporting mechanisms (e.g., open the blinds instead of turn on a light to provide sufficient light for reading).

本文提出了一种基于活动识别的能源自动化经济运行的方法。最初的实验结果表明实时的活动识别和设备使用感知可以提供一种有效的机制，来关闭不需要使用的设备，从而达到节能目的。本文工作仅仅是，基于活动识别的家庭自动化中，进行的初步工作。可靠的智能家居自动化系统依赖于可靠的活动识别，这一方面需要进一步改进。随着活动识别算法的健壮性增强，更多的控制可以应用于CARL系统。未来，我们将会研究利用机器学习的技术，探索更多的设备使用场景（比如，可再生能源和低价能源可以获得时）；并且，我们会支持更多的自动化机制（比如，通过打开百叶窗来调节房间内的光强度）。