Efficient Video Multicast in Wireless Surveillance Networks for Intelligent Buildings

**Speaker**  
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**Time**  
2:00 pm - 2:30 pm

**Venue**  
CS Seminar Room, Y6405, 6th Floor  
Yellow Zone, Academic 1  
City University of Hong Kong  
83 Tat Chee Avenue  
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**Abstract**

Video surveillance deployed over a flexible Wireless Ad-hoc NETwork (WANET) is gaining popularity in building and home environments, where many users may interest in the video content from any camera sensor. Energy-efficient multicasting is an important issue, since camera sensors always equipped with limited energy capacities. A number of works have considered the problem of maximizing the multicast lifetime by assigning the transmission range of nodes. However, the bandwidth required by the video stream is assumed to be the same along the multicast tree, although it can also affect the lifetime of the multicast. Scalable Video Coding (SVC) standardizes the encoding of a high-quality video bitstream that also contains one or more subset bitstreams. A subset video bitstream could be extracted by dropping packets from the larger video to reduce the bandwidth required for the subset bitstream. Therefore, SVC provides a promising solution for increasing the video multicast lifetime by reducing the bandwidth, while also bring new challenges. In this paper, we investigate an Energy-Efficient Scalable Video Multicast (E2SVM) problem, which is to maximize the scalable video multicast lifetime in a WANET. A Grafting algorithm is also proposed to address the E2SVM problem. Simulations show that the performance of our proposed algorithm can improve the lowest coverage ratio up to 14.3% compared to existing solutions.

This paper was presented at the 2016 IEEE International Conference on Industrial Technology (ICIT 2016), March 14-17, Taipei, Taiwan.

Supervisor: Dr HANCKE, Gerhard Petrus

Research interests: Visual Sensor Networks; Internet of Things

All are welcome!

In case of questions, please contact Dr Gerhard P Hancke at Tel: 3442 9341, E-mail: gp.hancke@cityu.edu.hk, or visit the CS Departmental Seminar Web at [http://www.cs.cityu.edu.hk/news/seminars/seminars.html](http://www.cs.cityu.edu.hk/news/seminars/seminars.html).