

Intelligent Surveillance and Event Understanding in Distributed Embedded Camera Networks of A Large Scale Community

*Jenq-Neng Hwang, Professor
Dept. of Electrical Engineering
University of Washington, Box 352500
Seattle, WA 98195
hwang@u.washington.edu*

With the huge amount of networked video cameras installed everywhere nowadays, there is an urgent need of embedded intelligence for automated surveillance and understanding. The scope of intelligent surveillance and analytics systems includes access control, crowd flux statistics analysis, intelligent transportation, abnormal event detection, and automated home and health care, etc. To accomplish this task, we have to integrate several research efforts, including automated video object segmentation for various indoor and outdoor condition, multiple video object tracking under various kinds of occlusion and segmentation errors, tracking of video objects across multiple cameras with overlapping or non-overlapping camera field of views, human object modeling using monocular videos to systematically create informative 2D or 3D motion trajectory descriptions of body parts, and finally the inference of events and behaviors of moving objects for automated event detections and human behavior understanding through 2D or 3D motion trajectory analysis. This talk will present some of our persistent efforts on these research topics in the past years and share some perspectives of future research and development directions.