

KEYNOTE SPEAKER

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Advances in Urban Video-based Surveillance Systems

Abstract

In recent years, a number of systems based on automatic video analysis for human security, traffic surveillance, home automation, and other applications are developed. Techniques of object and event recognition, behaviour understanding, and action representation form a basis for such systems. The activity recognition in urban environment is the main problem of current investigations, which is built on data and knowledge representations of objects and reasoning scenarios. Such techniques are strongly dependent on low-level and middle-level vision tasks such as the filtering and motion segmentation following tracking.

The focus of this presentation is to discuss the applications of intelligent technologies and systems in vision-based urban surveillance. The application of intelligent paradigms improves the efficiency and safety on the road networks (e. g. traffic alerts, estimated time to reach a destination and alternative routes, unmanned-driven cars). The analysis of eyes and hands activity for automatic driving risk detection is one of the crucial problems in urban environment. Also car manufacturers, public transportation services, and social institutions are interested in detecting the pedestrians in the surroundings of a vehicle to avoid dangerous traffic situations. The research on 3D computer graphic for the model representation of actual urban environment is also presented.