

Object detection and representation method for surveillance video indexing

ABSTRACT

The huge volume of videos produced by surveillance cameras has increased the demand for the fast and effective video surveillance indexing and retrieval systems. Although environmental condition such as light reflection, illumination changes, shadow, and occlusion can affect the indexing and retrieval result of any video surveillance system, nevertheless the use of reliable and robust object (blob) detection and representation methods can improve the performance of the system. This paper presents a video indexing module, which is part of a video surveillance indexing and retrieval framework, to overcome the above challenges. The proposed video indexing module is composed of seven components: background modeling, foreground extraction, blob detection, blob analysis, feature extraction, blob representation, and blob indexing. The experimental results showed that the selection of appropriate blob detection method could improve the performance of the system. Moreover, the experiments also demonstrated that the functionality of the proposed blob representation method was able to prevent the processing of redundant blobs' information.

Keyword: Blob analysis; Object detection; Surveillance video; Video indexing; Video retrieval