Computer Vision and the Proliferation of Video Cameras

Lihi Zelnik Manor

Abstract

The recent increase in usage of video cameras and video sharing sites poses a number of challenges to machine vision scientists: how do we organize, index and search such a large wealth of data?

Content-based video search and classification have been proposed in the literature and applied successfully to analyzing movies, TV broadcasts and lab-made videos. However the richness and variability of the videos available today on the internet are much higher. We explore the performance of some previous algorithms on generic videos downloaded from the web and show they provide unsatisfactory, yet promising classification results. One of the causes to our results is that such rich data is bound to be redundant. For example, multi-camera setups often record different views of the same scene and long videos are often a collection of similar scenes (e.g., to label a video as ``soccer'' one does not need to process the entire video). Therefore, we further look into the need to prune redundant data by selecting representative video clips. This is useful for speeding-up and improving classification as well as for compact visualization.