UNIVERSITY OF CENTRAL FLORIDA
CENTER FOR RESEARCH IN COMPUTER VISION

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INRIA

"Actions recognition from videos: some recent results"
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ABSTRACT

The amount of digital video content available is growing daily, on sites such as YouTube. Recent statistics on the YouTube website show that around 48 hours of video are uploaded every minute. This massive data production calls for automatic analysis. In this talk we present some recent results for action recognition in videos.

We, first, introduce trajectory-based video features, a state-of-the-art video representation. Trajectory features are obtained by tracking dense points with optical flow and are described with motion boundary histograms. Our approach obtained excellent results on the TrecVid Multimedia Event detection task.

We, then, show how to move towards more structured representations by explicitly modeling human-object interactions. We learn how to represent a human actions as an interactions between persons and objects. We localize in space and track over time both the object and the person, and represent an action as the relative motion between object and person.

Finally, we present work on learning object detectors from real-world web videos known only to contain objects of a target class. We propose a fully automatic pipeline that localizes objects in a set of videos of the class and learns a detector for it.

This is joint work with V. Ferrari, H. Garbner, A. Klaeser, D. Oneata, A. Prest, J. Verbeek, H. Wang.

BIOGRAPHY

Cordelia Schmid holds a M.S. degree in Computer Science from the University of Karlsruhe and a Doctorate, also in Computer Science, from the Institut National Polytechnique de Grenoble (INPG). Dr. Schmid was a post-doctoral research assistant in the Robotics Research Group of Oxford University in 1996-1997. Since 1997 she has held a permanent research position at INRIA Grenoble, where she is a research director and directs the INRIA team called LEAR for LEArning and Recognition in Vision. Dr. Schmid has been an Associate Editor for IEEE PAMI (2001-2005) and for IJCV (2004-), a program chair of IEEE CVPR 2005 and ECCV 2012 as well as a general chair of IEEE CVPR 2015. In 2006, she was awarded the Longuet-Higgins prize for fundamental contributions in computer vision that have withstood the test of time. In 2012, she was named IEEE fellow and was awarded an ERC advanced grant.