מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Jan 01, 2015
at 12:15

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Towards Dense Correspondences Between Any Two Images

Abstract:

We present a practical method for establishing dense correspondences between two images with similar content, but possibly different 3D scenes. One of the challenges in designing such a system is the local scale differences of objects appearing in the two images. Previous methods often considered only small subsets of image pixels; matching only pixels for which stable scales may be reliably estimated. More recently, others have considered dense correspondences, but with substantial costs associated with generating, storing and matching scale invariant descriptors.
Our work here is motivated by the observation that pixels in the image have contexts -- the pixels around them -- which may be exploited in order to estimate local scales reliably and repeatably. In practice, we demonstrate that scales estimated in sparse interest points may be propagated to neighboring pixels where this information cannot be reliably determined. Doing so allows scale invariant descriptors to be extracted anywhere in the image, not just in detected interest points. As a consequence, accurate dense correspondences are obtained even between very different images, with little computational costs beyond those required by existing methods.

This is joint work with Moria Tau from the Open University of Israel