

Towards Robust and General Matching

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This talk will describe some achievements that were obtained in matching images these recent years, and also show how these achievements can change the way vision related problems can be addressed. It will more particularly focus on results obtained in our group and some demos can be seen on <http://www.inrialpes.fr/movi/pub/Demos/index.html> The first lesson to be learnt from what has been successfully experimented is the need to integrate robustness in the matching process, as image are naturally corrupted by noise that can be hardly modeled, think about occlusion or clutter for instance. Robustness can be achieved by robust encoding of attributes and robust estimators, and/or by building robust decision using the redundancy of image information. The second point the talk will highlight is that invariant or quasi-invariant can be encoded on the grey level values and these invariant provides signatures that are significant and discriminant. Invariance can be divided in two categories: illumination and geometric invariance. The talk will illustrate how this kind of matching can help in applications like structuring videos or, for copyright protection purpose, searching in image data bases.