Extraction and matching of feature points in bitmaps

Bc. Peter Kottáš

Stavebná fakulta STU,
Radlinského 11, 81368 Bratislava
E-mail: peter.kottas@stuba.sk

We are going to cover the problem of feature points recognition in bitmaps. Follow-up to this problem is the usage of the database as a source of potential matches. This approach brings us closer to understand object recognition. Main purpose of this article is to introduce variety of steps required for basic feature recognition application to work. Main idea was thought out by David G. Lowe and is covered in "Object recognition from local scale-invariant features", International Conference on Computer Vision, Corfu, Greece (September 1999). However there are parts that might be confusing, especially during algoritmization process. I would like to create a user-friendlier description of this state-of-art idea and introduce few of my observations and potential improvements that I thought-off during implementation. This work might be as well considered to be jumping-board for computer vision itself. In fact I expect it to lay ground work for understanding feature recognition at all levels. Hopefully it will make it possible to introduce my own solutions for numerous problems still present in computer vision.

Areas with huge potential for image matching is object recognition, panorama stitching, counting algorithms (traffic cameras for example), face recognition, etc. There are so many opportunities that it would be enough for another speech.