Reconstruction of 3D objects from image sequences is often based on matching corresponding image points, i.e. points within the image which are projections of the same 3D point. After interest point operators like SIFT or SURF have detected such points in an image, the neighborhood of the point is described and compressed in a feature vector. The resulting feature vectors are compared during point matching in order to find correspondences.

This matching is often very time consuming and only successful for a small fraction of all available keypoints. Most possible matches are rejected since the similarity is too small, the match is not symmetric, there are other nearly as well matching keypoints, etc.

The goal of this thesis is to decide before the actual matching procedure, whether a given keypoint has a chance to be successfully matched. In order to answer this question, different characteristics like size, color, self-similarity etc. shall be taken into account.

Keywords: Keypoint matching, structure from motion

Involved tasks:
- Literature Research
- Implementation of selection framework
- Evaluation and comparison to classical approach

(Recommended) requirements:
- Good knowledge about digital image processing (e.g. attendance in lecture DIP)
- Basic knowledge about photogrammetric computer vision (e.g. attendance in lecture PCV)
- Good programming skills (e.g. C++)

Language: German / English