Determining the semantic content of images is an important and challenging task within the field of computer vision. While image categorization systems aim to label the whole image according to the represented scene (e.g. portrait, landscape, animal, flower, building), the task of object categorization is to detect and classify instances of a several categories within the image.

Obviously both tasks are strongly connected: On the one hand knowledge about objects within the scene represents a strong cue about the general topic. On the other hand objects are more likely to be detected in images of certain topics, while they are unlikely to appear in others.

Nevertheless, both tasks are mostly solved independently. The goal of this thesis is to investigate the benefits of solving the joint categorization problem.

Keywords: Image categorization, object categorization, classification

Involved tasks:
– Literature Research
– Design and implementation of the corresponding categorization framework
– Evaluation of the developed algorithm

(Recommended) requirements:
– Good understanding of image processing methods (e.g. attendance in Digital Image Processing)
– Good Knowledge about image analysis (e.g. attendance in Automatic Image Analysis)
– Good mathematical skills (i.e. stochastic)
– Good programming skills (e.g. C/C++)

Language: German / English