Most machine learning based methods for object detection or object recognition based on images require a tremendous amount of labelled training data. Usually hundreds or thousands of images are used to enable the categorization system to successfully learn a single object class. In contrary, one-shot learning tries to infer the relevant information from a single, or at least only very few, labelled training images.

The goal of this thesis is to review state-of-the-art one-shot learning approaches for image-based object detection, to extend them by own ideas if possible, and to evaluate the performance on standard benchmark databases.

**Keywords:** One-shot learning, object detection, classification

**Involved tasks:**
- Literature research
- Implementation of a object classification system that needs a very small amount of training data
- Evaluation of the whole framework

**(Recommended) requirements:**
- Good knowledge about image analysis (e.g. attendance in Automatic Image Analysis)
- Good programming skills (e.g. C/C++)

**Language:** German / English