Comparative study of Machine Learning Methods for Object Recognition in Synthetic Aperture Radar Images

Synthetic Aperture Radar (SAR) gained more and more importance within the last decades due to its convenient properties like independence of daylight and weather conditions. However, the automatic analysis of SAR images is still challenging.

Over the years many different techniques of machine learning have been applied to the automatic recognition of objects in radar images.

The goal of this thesis is to investigate and compare several state-of-the-art machine learning techniques with respect to their performance in detecting objects in SAR images.

Keywords: Synthetic Aperture Radar, Support Vector Machine, Multi-Layer Perceptron

Involved tasks:
– Literature research
– Comparative evaluation of selected machine learning techniques

(Recommended) requirements:
– Basic understanding of remote sensing (e.g. attendance in lecture MRRS)
– Basic understanding of image analysis (e.g. attendance in lecture AIA)
– Basic programming skills (e.g. C++)

Language: German / English