The aim of this bachelor thesis is to implement and test an interactive application for the analysis, visualization and classification of satellite data. The satellite data are preprocessed and automatically composed into colored images. The application allows to create and compare two types of classification algorithms. The first type uses single images and the second type uses multiple images of the same place, but at different times. We also created an interface for selecting and managing the training data. A few well-known classification algorithms of both types were implemented and their success rates were compared in an experiment. All the satellite data used in the experiment are from the Landsat program. The result of this bachelor thesis is an application primarily focused on classification. But the application could also be extended into a complex GIS system.