

A comparison of support vector machine and decision tree classifications using satellite data of Langkawi Island

ABSTRACT

This study investigates a new approach in image classification. Two classifiers were used to classify SPOT 5 satellite image; Decision Tree (DT) and Support Vector Machine (SVM). The Decision Tree rules were developed manually based on Normalized Difference Vegetation Index (NDVI) and Brightness Value (BV) variables. The classification using SVM method was implemented automatically by using four kernel types; linear, polynomial, radial basis function and sigmoid. The study indicates that the classification accuracy of SVM algorithm was better than DT algorithm. The overall accuracy of the SVM using four kernel types was above 73% and the overall accuracy of the DT method was 69%.

Keyword: Classifiers; Remote sensing; Artificial intelligence; Biodiversity