Abstract

This paper presents a thorough experimental analysis to investigate the behavior of neural network classifier for classification of multispectral satellite images. For this series of experiments have been performed to study the effect of various neural network parameters upon classification accuracy. It is per pixel supervised classification using spectral bands (original feature space). The parameters considered are: initial weight, training set size, number of hidden layer neurons and number of input layer nodes. Based on 1050 number of experiments, it is concluded that for good classification accuracy and speed, following two critical issues needs to be addressed: 1) selection of most discriminative spectral bands and 2) determination of optimal number of nodes in hidden layer. The accuracy obtained with ANN classifier is compared with that of traditional classifiers like MLC and Euclidean classifier using Xie-Beni and ? indexes.

References

Performance Analysis of ANN for Satellite Image Pixel Classification


Index Terms

Computer Science          Pattern Recognition

Keywords

Artificial Neural Network; Land Cover Classification; Multispectral Satellite Imagery
Neural Network Structure.