Hyperspectral Image Classification using Softcomputing Techniques: A Review

Volume 182

Number 11

Year of Publication: 2018

Authors:

A. Rajitha, P. Bhargavi, S. Jyothi

Abstract

Hyperspectral image classification plays a major role in remote image analysis. Hyperspectral images provide both spatial details of airborne imagery and spectral resolution for spectroscopic analysis and narrow band analysis techniques. Available satellite sensors like Hyperion, Hy-Map and AVIRIS are good sources of hyperspectral data. Applications of hyperspectral images are remote sensing, seed viability study, biotechnology, environmental monitoring, medical diagnose, food, pharmaceuticals and so on. Traditional techniques are difficult to deal with hyperspectral images directly, because hyperspectral images have continuous narrow spectral bands. To overcome this, hyperspectral image classification can be done using different softcomputing techniques. Softcomputing is an emerging field consisting of Fuzzy Logic, Neural Network and Genetic Algorithms. This paper reviews how hyperspectral image classification can be done using different softcomputing techniques.

References
17. Friedl, M.A, Brodley C.E, and Strahler A.H.,(1999), Maximizing land cover classification
accuracies produced by decision trees at continental to global scales, IEEE Transactions on Geoscience and Remote Sensing, 37,969-977.


35. Z. Wang , X. Sun , D. Zhang , in: Advanced intelligent computing theories and
42. F. Rosenblatt, Psychol. Rev. 65 (1958) 386–408.
50. Soo-See Chai, Bert Veenendaal, Geoff West, Jeffrey Philip Walker, “Backpropagation neural networks for soil moisture retrieval using NAFE’05 data:
validation of a neural network model for soil water content prediction with comparison to regression techniques. Transactions of the ASAE 42 (3), 691–699.


**Index Terms**

Computer Science  
Image Processing

**Keywords**

Hyperspectral Image classification, Fuzzy Logic, Artificial Neural Networks, Genetic Algorithm