

عنوان مقاله:

Hyperspectral Image Classification Based on Spectral-Spatial Features Using Probabilistic SVM and Locally Weighted Markov Random Fields

محل انتشار:

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خلاصه مقاله:

The proposed approach of this paper is based on integration of the local weighted Markov Random Fields (MRF) on support vector machine (SVM) framework for hyperspectral-spectral-spatial classification. Our proposed method consists of performing probabilistic SVM classification followed by a spatial regulation based on the MRF. One important innovation of this paper is the use of marginal weighting function in the MRF energy function, which preserves the edge of regions. The proposed spectral-spatial classification was examined with four real hyperspectral images such as aerial images of urban, agriculture and volcanic with different spatial resolution (1.3m and 20m), different spectral channels (from 102 to 200 bands) and different sensors (AVIRIS and ROSIS). The novel approach was compared with some previous spectral-spatial methods such as ECHO and EMP. Experimental results are presented and compared with class map visualization, and some measurements such as average accuracy, overall accuracy and Kappa factor. The proposed method improves accuracy of classification especially in cases where (spatial additional information is significant (such as forest structure

کلمات کلیدی:

Hyperspectral Spectral-Spatial Classification, Markov random fields, probabilistic SVM, local weighted marginal, remote sensing

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