Abstract
The classification of remotely sensed images knows a large progress taking in consideration the availability of images with different resolutions as well as the abundance of classification’s algorithms. A number of works have shown promising results by the fusion of spatial and spectral information using Support vector machines (SVM). For this purpose, we propose a methodology exploiting a composite kernel that easily combines multi-spectral features, Haralick texture features and Hybrid Median Filter, with different window sizes. The proposed approach was tested on common scenes of urban imagery. The result shows that the combined use of spectral and texture information together significantly improved the accuracy of satellite image classification.

References

- Bekkari A., Idbraim S., Mammas D. and El yassa M. 2011 “Exploiting spectral and space information in classification of high resolution urban satellites images using Haralick
features and SVM"; IEEE 2ed International Conference on Multimedia Computing and Systems ICMCS, Ouarzazate, Morocco.
- Chiu, W. Y., and Couloigner I. 2004 "Evaluation of incorporating texture into wetland mapping from multispectral images"; University of Calgary, Department of Geomatics Engineering, Calgary, Canada, EARSeL eProceedings.
- Chapel L. 2007 "Maintenir la viabilité ou la résilience d'un système : les machines à vecteurs de support pour rompre la malédiction de la dimensionnalité"; Thesis of doctorate, university of Blaise Pascal - Clermont II.
- Fauvel M., Chanussot J. and Benediktsson J. A. 2006 "A Combined Support Vector Machines Classification Based on Decision Fusion"; IEEE International Geoscience and Remote Sensing Symposium, IGARSS 06, Denver, USA.

Index Terms

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