PERFORMANCE EVALUATION OF SVM KERNELS ON MULTISPECTRAL LISS III DATA FOR OBJECT CLASSIFICATION

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Abstract- Object based classification plays an important role in every field. Support vector machine is the popular algorithm for object based classification. Support vector machine classifies the data points using straight line. Some datasets are impossible to separate by straight line. To cope with this problem kernel function is used. The central idea of kernel function is to project points up in a higher dimensional space hoping that separability of data would improve. There are various kernels in the LIBSVM package. In this paper, Support Vector Machine (SVM) is evaluated as classifier with four different kernels namely linear kernel, polynomial kernel, radial basis function kernel and sigmoid kernel. Several datasets are being experimented to find out the performance of various kernels of SVM .By changing the value of 'C' and γ varying results are observed. Among these RBF kernel with a value of C = 1000 and gamma=0.75 got an excellent accuracy of 99.1509%.The SVM-RBF kernel gave an edge over the other kernels with an accuracy of 99.1509% while linear at 98.9623%, polynomial at 98.6792% and Sigmoid at 98.5849%.

Index terms: SVM, LibSVM,   Kernels,   Object based classification, Transformed Divergence.