

## Online Handwritten Character Recognition for South Indian Scripts Using Support Vector Machines

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**Abstract :** Online handwritten character recognition is a challenging field in Artificial Intelligence. The classification success rate of current techniques decreases when the dataset involves similarity and complexity in stroke styles, number of strokes and stroke characteristics variations. Malayalam is a complex south indian language spoken by about 35 million people especially in Kerala and Lakshadweep islands. In this paper, we consider the significant feature extraction for the similar stroke styles of Malayalam. This extracted feature set are suitable for the recognition of other handwritten south indian languages like Tamil, Telugu and Kannada. A classification scheme based on support vector machines (SVM) is proposed to improve the accuracy in classification and recognition of online malayalam handwritten characters. SVM Classifiers are the best for real world applications. The contribution of various features towards the accuracy in recognition is analysed. Performance for different kernels of SVM are also studied. A graphical user interface has developed for reading and displaying the character. Different writing styles are taken for each of the 44 alphabets. Various features are extracted and used for classification after the preprocessing of input data samples. Highest recognition accuracy of 97% is obtained experimentally at the best feature combination with polynomial kernel in SVM.

**Keywords :** SVM, matlab, malayalam, South Indian scripts, onlinehandwritten character recognition

**Conference Title :** ICCICE 2015 : International Conference on Communication, Information and Computer Engineering

**Conference Location :** London, United Kingdom

**Conference Dates :** July 25-26, 2015