Comparative study on machine learning performances in recognitioning off-line Tamil handwritten signatures using structure and gradient featuers

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Biometric signatures are commonly accepted for authentication and confirmation of a person because each person has an individual signature and its distinct behavioral property. Handwritten signature recognition can be divided into two categories: off-line and online signature recognitions. For the purpose of the comparative study, the well-known five different classifiers, namely, Naïve Bayes, Naïve Bayes Multinomial, Simple Logistic, J48 and Random Forest are selected in the experimental process by incorporating the structural and gradient features. In this experiment, 50 different Tamil handwritten signatures were considered. Each of the signatures were obtained 50 times from the same person at different mode and occasions. Naïve Bayes yields a recognition rate of 91.73%, Simple Logistic yields a recognition rate of 98.26%, J48 yields a recognition rate of 72.13%, and Random Forest yields a recognition rate of 98.40%. Naïve Bayes Multinomial shows better recognition rate of 98.53%.

Key words: *Naïve Bayes, Simple Logistic, Random Forest, J48, Weka Tools*

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