5th International Conference of Multidisciplinary Approaches (iCMA), 2018
Faculty of Graduate Studies,
University of Sri Jayewardenepura,
Sri Lanka
ISSN: 2386 – 1509

OPTICAL RECOGNITION OF EMBOSSED BRAILLE CHARACTERS

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ABSTRACT

Here, we describe a Braille character recognition system based on image processing techniques. The developed system identifies Sinhala Braille characters in single sided Braille documents and translates them into Sinhala language. This system is also capable of identifying Grade1 English Braille characters, numbers, capital letters and some words in Grade 2 English Braille system. Implementation of the system was carried out in two different approaches. They were the braille character regeneration method and Support Vector Machine with Histogram of Oriented Gradient feature extraction method. The translated text is displayed in a word processor application as the final outcome. Performance evaluation results reflect that both methods can recognize Braille characters and translate to user selected language either Sinhala or English efficiently, with over 99% of accuracy.

Keywords: Braille, Braille Recognition, Image Processing, SVM, HOG