ABSTRACT

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AUTOMATED MARKING IN MULTIPLE CHOICE QUESTION USING OPTICAL CHARACTER RECOGNITION

Although there are many OMR software that can help in order to reduce time used for exam correction, it is hard to be implemented because of the limitation of available resource. Therefore, this thesis conducted a research on how to implement a software that can do automatic markingsystem to extract data from captured image without the use of OMR, but using typical low-cost webcam combined with an OCR software. The software built in this thesis also implements a neural network for recognizing handwritten text such as name and student number, but with a small range of recognition for a small set of training data.

There are two type of form used here, first is a template form filled with black blobs in each input box such as name, number, and choices. This template form captured first to determine the coordinate of each input box in the paper. The second type is an empty exam form ready to receive input from the exam and to be processed to extract information from a given exam. To know each position of input box, the software use the coordinate found from template form. Information such as name and number that is handwritten, will be recognized using self organizing maps, while information regarding the answer of each number will be recognized using image processing algorithm.

After building the software, testing is performed. From the testing, the recognition rate of alphabetic characters from extracted images of name is 69%, while the rate for numerical characters from extracted images of number is 64.23%. From conducted test also, the recognition rate of choices is quite impressive, between 95-99% with lowest accuracy is 96.25% and highest is 100%.