ABSTRACT

COMPARISON OF TEMPLATE MATCHING AND FEATURE EXTRACTION ALGORITHM IN OPTICAL CHARACTER RECOGNITION

By:
RADEN SOFIAN BAHRI
10107318

Template matching algorithm is a simple method and most used in pattern recognition. Weakness of this algorithm is limitted model that used to be template as conqueror in database like shape, size, and orientation. Feature extraction algorithm solve model template problem like shape, size, and oritentation in template matching algorithm by map the feature of object that will be recognize.

Optical character recognition use to translate character in digital image into text format. Template matching is method that most used un OCR because of simplixity [1].

Based on test result, template matching algorithm have 29.459% in accuracy, while feature extraction algorithm have 63.602% in acccuracy. Feature extraction algorithm has chance to develop especially in a feature mapping of digital image than template matching algorithm which only mapp pixel intensity in OCR. Complexity of both algorithm is measured by count basic opetation. Feature extraction algorithm has same complexity with template matching algorithm where complexity is 2n+1. Feature extraction algorithm need six process to mapp and recognize the feature, template matching algorithm need three process to map the pixel intensity and count minimum eror value. Template matching algorithm need 180.743 seconds to recognize document that test to the system. Feature extraction algorithm need 5.117 seconds to rexognize test document.

Based on accuracy, development, and time, feature extraction algorithm is better than template matching algorithm in OCR.

Keyword: template matching, feature extraction, and optical character recognition