Thesis Title	Handwritten Thai Character Recognition Using Deformable Wavelet Descriptor
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Abstract

Handwritten Thai characters have complex structure and unconstrained shape depending on writing style. In order to increase recognition rate and use low computation, this thesis proposes handwritten Thai characters recognition using deformable wavelet descriptor. In the recognition, contours of Thai characters are utilized to determine templates in term of temporal domain. Then, range of deformation is obtained by standard deviation of wavelet descriptor coefficients from character training set. To fit the templates with input characters, all templates are deformed to obtain the best fit by determined deformation range. The best fit of each character template is represented by score, and the character template with highest score is the recognition result. The experiment consists of two part. The first is experiment for comparing the recognition rates of the system for constrained and unconstrained handwritten Thai character. We use ten styles of characters (440 categories) as the training set and twenty styles (880 categories) as the input characters. The results show 98.64 percent recognition rate for constrained shapes and 89.1 percent for unconstrained shapes. The second one is the experiment for comparing the recognition rates of the system using deformable Fourier descriptor with that of the proposed method. The results show that the recognition rate of the proposed method is about 10 percent better.

Keywords : Character Recognition / Deformable Wavelet Descriptor / Template / Deformable Range / Standard Deviation