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Abstract

AN INTELLIGENT EVALUATION SYSTEM OF CHINESE CALLIGRAPHY

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Chinese calligraphy is an important art style in Chinese culture. In this thesis, an evaluation method of Chinese calligraphy is proposed and an intelligent evaluation system is developed to help people to learn Chinese calligraphy.

In the calligraphy evaluation model, the aesthetic evaluation can be analyzed from the global and local aspects of the user's input written character with respect to the given target character. For the whole structure of the character, we can evaluate the input character based on the five features of character center, size, width and height ratio, projections, and thickness. For the radical, there are three features, which are radical center, size, and the ratio of width and height. And for each extracted stroke of the character, three features of stroke center, length and thickness can be evaluated quantitatively. All these features are used to evaluate the similarity of the user's input written character with the target ideal one. Through this useful system, people could learn and practice Chinese calligraphy more efficiently.

In addition, an algorithm of stroke extraction is designed and implemented in this thesis for Kai style of Chinese calligraphy with 54% successful ratio for whole 6763 general characters. For some strokes in a character which cannot be extracted correctly by the algorithm, we developed a manual software tool to extract them, especially for the user's input.

This work will benefit to Chinese calligraphy learning software development as well as signature verification application.