ABSTRACT

Graphology is a branch of knowledge which learns about handwriting that commonly used to get to know a character and personality of a person, therefore we can get to know further about a person whom that handwriting belongs to. The person who masters in interpreting the handwriting is commonly known as graphologist. All this time, graphologist need a quite long time to interpreting someone's personality through their handwriting, besides, the experience and knowledge of each graphologist are different which mean it is very possible for us to get a different output when we go to two different graphologists.

In this thesis, the writer tried to computerize the process in interpreting the handwriting using three parameters; size of letter, slant of baseline, and space between words which further be used as guide in predicting the character and personality of a person. The methods used to analyze those parameters are image processing to decrease the noise that may be shown in the digitalized handwriting, then the segmentation is applied to that digital data and after the parameter are measured, the final result will be decided by backpropagation artificial neural network (ANN) based on the system learning process. In order to realizing this system, the writer use C# as the programming language.

After implementing this thesis towards 225 different writers, the result shows the training accuration of the system is 94% while for the testing accuration is 67%. The accuration is achieved by taking the best initialization of an ANN architecture's compiler parameters when we do the training. From that training, the optimum architecture built using single hidden layer with 15 neurons, 0.1 as learning rate, 0.2 as momentum, and the maximum epoch is 100000.

Keywords: graphology, image processing, handwriting analyse, artificial neural network (ANN), C#

Bismillahirrahmanirrahim.....

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