A Novel Method for Handwritten Digit Recognition System

Literature Survey:

In reviewing the literature, we find various algorithms for handwritten digit segmentation. A direct comparison, though, is not a trivial task. On the contrary, it may not even be feasible.

In this research work , the algorithms for segmenting handwritten digits based on different concepts are compared by evaluating them under the same conditions of implementation. A robust experimental protocol based on a large synthetic database is used to assess each algorithm in terms of correct segmentation and computational time. Results on a real database are also presented. In addition to the overall performance of each algorithm, we show the performance for different types of connections, which provides an interesting categorization of each algorithm. Another contribution of this work concerns the complementarily of the algorithms.

We have observed that each method is able to segment samples that cannot be segmented by any other method, and do so independently of their individual performance. Based on this observation, we conclude that combining different segmentation algorithms may be an appropriate strategy for improving the correct segmentation rate. Here they selected

those algorithms that used to produce the segmentation cuts. Then, these algorithms were assessed for performance the proposed evaluation criteria provided the global performance of each algorithm, as well as their performance on four different types of connections. The experimental results show that these algorithms achieve similar performances on both databases, which qualifies the synthetic dataset as a viable alternative for benchmarking segmentation algorithms.

During the evaluation, they observed that, independently of the overall performance, each method is able to segment some samples that cannot be segmented by any other method. It corroborates the argument that even a method with low overall performance can contribute to building a more reliable segmentation system.

As they have demonstrated, this kind of analysis also constitutes useful contribution to identifying complementarily among the segmentation algorithms, which can be used to develop more intelligent systems. The main challenge in building such an intelligent system lies in the correct identification of the connection types, which certainly is not a trivial task. In some cases, especially in real-time applications, this is a very important issue that can determine the success or failure of a handwriting recognition system.