Abstract

In this paper a new algorithm is introduced for syntactic pattern recognition and string matching by using linked list data structure which later could be used for hand written digits recognition. At first, handwritten digits are changed to string as input pattern by using chain code then the achieved string is recognized by using refer algorithm being implemented by linked list. This refer algorithm is able to compute the distance between the chain code strings shown in the implementation. The suggested algorithm reduces time complexity of Levenshtein’s algorithm from second-order to linear-order and in addition is able to decrease the consumption memory and increase accuracy of handwritten digits recognition as well. Our proposed implemented algorithm has 94.8% accuracy over 3000 handwritten digits samples.

References

Index Terms

- Computer Science
- Pattern Recognition

Keywords
- handwritten digits
- chain-code
- syntactic pattern recognition
- string matching
- linked list data structure
- dynamic programming
- time complexity