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 Levenstein’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