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A Project Report on

"KANNADA CHARACTER RECOGNITION"

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ABSTRACT

In this report the results of handwritten Kannada characters recognition are presented. Two different approaches have been undertaken. One is Offline based method also called as static method wherein the concept of Kohonen neural network is used to recognize the written character. In the second approach, an online based technique also called as dynamic method using direction change principles is undertaken. We find that the methods can be suitably used in different areas. The offline method or the static method can be used to recognize printed text and to convert the text in printed format to editable format. The online-method can be used to enter text in a handwritten manner using a stylus on a touchpad or more simply by using a mouse.

The benefits and the pitfalls of OCR technology is summarized. The algorithms used for both static and dynamic approach is explained along with the implementation. Appropriate diagrams have been included for proper understanding of the approaches to both static and dynamic methods. A basic introduction to the Kannada character set is also given which should be good enough to get an overview on the writing style of characters and the difficulties involved in obtaining a Character recognition software for Kannada character set. The requirements for the project is clearly provided. An introduction to various existing approaches to Character Recognition domain is also given along with the steps generally taken in each.

Comparison of the two methods is done. The comparison is in terms of average recognition accuracy and the number of training samples required to obtain an acceptable performance. While the first criterion evaluates effective recognition capability of a scheme, the second one is important for studying the effectiveness of a scheme in real time applications. Error analysis is also performed to determine the improvement required. Along with error analysis, the hit rate is computed which helps in getting an idea on the accuracy of recognition. Higher the hit rate the better is the algorithm used. This implies for both offline and online method. Finally the enhancements that are being intended are also mentioned.