

Sanskrit Text Recognition using Machine Learning

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***Abstract:** Character recognitions are becoming increasingly important as technology continues to improve at an astounding rate, and they serve a vital role in encouraging research into OCR techniques. Researchers have discovered that the identification of Sanskrit handwriting is one of the most difficult areas of research in the field of pattern recognition. Using character recognition software, you may encode handwritten or printed text from scanned photographs. The software turns the data into a format that can be read by machines. When it comes to the verification of individuals and documents, character recognition is a biometric capability that is commonly employed. An off-line handwritten character recognition system was developed in this research using a feed forward neural network as the input to the network. Using a handwritten Sanskrit character sized to 20x30 pixels, the neural network is trained to recognise words in English. Following the training process, neural networks with different sets of hidden neurons were trained and their identification rates for Sanskrit characters were compared against each other. According to the results of the proposed system, the accuracy rates are comparable to those of earlier handwritten character recognition systems in terms of speed and accuracy.*

REFERENCES

- [1] Hinton, Geoffrey E., Nitish Srivastava, Alex Krizhevsky, Ilya Sutskever, and Ruslan R. Salakhutdinov. "Improving neural networks by preventing coadaptation of feature detectors." arXiv preprint arXiv:1207.0580 (2012).
- [2] Krizhevsky, Alex, Ilya Sutskever, and Geoffrey E. Hinton. "Imagenet classification with deep convolutional neural networks." In Advances in neural information processing systems, pp. 1097-1105. 2012.
- [3] LeCun, Yann, Bernhard Boser, John S. Denker, Donnie Henderson, Richard E. Howard, Wayne Hubbard, and Lawrence D. Jackel. "Backpropagation applied to handwritten zip code recognition." Neural computation 1, no. 4 (1989): 541-551.
- [4] Nair, Vinod, and Geoffrey E. Hinton. "Rectified linear units improve restricted Boltzmann machines." In Proceedings of the 27th international conference on machine learning (ICML-10), pp. 807-814. 2010..
- [5] Szegedy, Christian, Wei Liu, Yangqing Jia, Pierre Sermanet, Scott Reed, Dragomir Anguelov, Dumitru Erhan, Vincent Vanhoucke, and Andrew Rabinovich. "Going deeper with convolutions." In Proceedings of the IEEE conference on computer vision and pattern recognition, pp. 1-9. 2015.