Abstract

Automatic Handwritten Digits Recognition (HDR) is the process of interpreting handwritten digits by machines. There are several approaches for handwritten digits recognition. In this paper we have proposed an appearance feature-based approach which process data using Histogram of Oriented Gradients (HOG). HOG is a very efficient feature descriptor for handwritten digits which is stable on illumination variation because it is a gradient-based descriptor. Moreover, linear SVM has been employed as classifier which has better responses than polynomial, RBF and sigmoid kernels. We have analyzed our model on MNIST dataset and 97.25% accuracy rate has been achieved which is comparable with the state of the art.

References

- Neera Saxena, Qasima Abbas Kazmi, Chandra Pal and O. P. Vyas, Employing Neocognitron Neural Network Base Ensemble Classifiers To Enhance Efficiency of Classification In Handwritten Digit Datasets. D. C. Wyld, et al. (Eds): CCSEA 2011, CS & IT
- Chang Liu, Tao Yan, WeiDong Zhao, et al., Incremental Tensor Principal Component Analysis for Handwritten Digit Recognition, Mathematical Problems in Engineering, vol. 2014, Article ID 819758, 10 pages, 2014

Index Terms

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Keywords

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