Abstract

With the advancement of modern technology the necessity of pattern recognition has increased a lot. Character recognition it's part of pattern recognition. In last few decades there has been some researches on optical character recognition (OCR) for so many languages like - Roman, Japanese, African, Chinese, English and some researches of Indian language like - Tamil, Devanagari, Telugu, Gujratietc and so many other languages. There are very few works on handwritten Bangla character recognition. As it is tough to understand like Bangla language because of different people handwritten varies in fervidity or formation, stripe and angle. For this it's so much challenging to work in this field. In some researches SVM, MLP, ANN, HMM, HLP & CNN has been used for handwritten Bangla character recognition. In this paper an attempt is made to recognize handwritten Bangla character using Convolutional Neural Network along with the method of inception module without feature extraction. The feature extraction occurs during the training phase rather than the dataset preprocessing phase. As CNN can't take input data that varying in shape, so had to rescaled the dataset images at fixed different size. In total final
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dataset contains 100000 images of dimension 28x28. 85000 images is used for training and 3000 images is used for testing. After analyzing the results a conclusion is derived on the proposed work and stated the future goals and plans to achieve highest success and accuracy rate.

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**Index Terms**

Computer Science  Artificial Intelligence

**Keywords**

Handwritten Bangla character, Shallow convonet, CNN, Inception, Data Normalization