**Review on paper:** Bengali Hand Sign Gestures Recognition using Convolution Neural Network - 2020

**Abstract**

In this paper, the authors tried to create a hand gesture recognizing model for Bangla Sign Language. Here we analyze and compares the previous research paper and our ongoing project on ASL and BSL translation using CNN.

**Introduction**

Sign language is used by the people who cannot hear and speak and most common people don’t understand sign language so the impaired people remain separate from the normal society. There has been many research related to translation of ASL done but Bengali Sign language has been recently been translated. The researchers of the paper focused on BSL detection using CNN. They identified both Bengali alphabets and numerals.

**Literature Review**

In the research they have used Keras API for feature extraction. The unnecessary data was normalized to extract the main features. In this case the hands are being extracted and the background such as wall etc is being removed. For our project we should also use a similar image preprocessing technique which will improve our accuracy further. In the research they have used CNN but they did not discuss the architecture of their CNN model.

**Methods**

First they have cleaned the dataset, rearranged and modified it so that it fits the network. Then they used feature extraction to extract important features and leave out the unnecessary features. They took 25,000 images for training and testing that was split into 80% for training and 20% for testing. They trained a CNN model to observer the result.

**Results**

They used a dataset for Bangla Sign Language of 24168 images. Their model generated an accuracy of 100% on digits and 97.5% accuracy on alphabets of Bangla. When both types of samples were used the accuracy was 98.75.

**Discussion**

They have pointed out they used extra layers such as batch normalization, convolution layers, max pooling and dropout, etc to get the highest accuracy possible. They have also compared the use of their model against the use of existing proposed systems such as PCA, LDA and SVM against their model using CNN provided the highest accuracy.

**Conclusion**

In the research they have developed a CNN model that was able to detect and classify BSL with an accuracy of 98.75%. They have compared the result against other models and shown that their model gives the highest accuracy among the others. They have used batch normalization which we haven’t used in our project and they have used feature extraction technique that we should also implement in our project so that we can achieve a higher accuracy.