Paper Review

Abstract: Sign language is an important part of communication for people with speaking and hearing disability. In the modern world almost every spoken language has its own verified sign language which is parallel to the written language. With the improvement of image recognition and computer speed, we can make the communication easy.

Introduction: The goal of this project is to translate American Sign Language (ASL) to English, and Bangla Sign Language to Bangla, in the form of text. When a sign language image is provided the webcam of the computer detects it. There is no universal sign language for all the countries around the world. Bangla sign language is made from several one handed sign alphabets and number signs.

Literature Review:

Methods: In this project it recognizes text in two main steps.

1. Capturing image of the hand showing the sign.
2. Recognize of hand gesture.

At first we search and collect for dataset. Our members took different kind of hand gesture signs. For the images we used Adam optimizer. The number of layers used are : convolutional layers 7, pooling layers 3, linear layers 3.

Results: We increased the number of layers to remedy issue. Though, it still persisted, though less in scope. As a result of the increase in layers, the size of the dataset increased by 50%. For this we are looking for alternative to remedy this issue. Additionally, for the Bangla dataset, the sign language dictionary we used to create the dataset, had a single sign assigned to multiple letters, making accuracy and readability of the output more difficult. Currently, we are working on this issue.

Discussion: So we made plans for the future work. Our future work will be

1. Use data augmentation to increase the size of our datasets, especially, our own Bangla dataset.
2. Translate the English sentences to Bangla and compare it with the sentences found from the Bangla dataset.

Conclusion: In this paper, we have explained the implementation of a system which translates American Sign Language to English and Bangla sign language to Bangla (in progress). We have discussed the importance of BSL translator for interacting with speech impaired people. We would like to add an educational function to our project for those who wish to learn sign language in the both sentences.