Paper Review 3

Abstract: Sign language, the non verbal language used by the people with hearing and speaking disability, known as the deaf and mute, to connect the bridge of communication with others. Being a visual means of communication, it deprives the mutes to communicate with people having a visual impairment. There is no universal sign language for all countries around the world. It is reported that around 1.5 million people in Bangladesh are deaf and hearing impaired.

Introduction: According to who around 466 million people have a hearing disability that is over 5% of the world’s population. 0.38% of the total population of Bangladesh have speech and hearing disabilities, according to National Census 2011. Speech impaired people usually depend on sign language interpreters for communication. Good interpreters are not easy to find and even if it is, it’s often expensive, especially when it comes to the translation of Bangla Sign Language. Computerized interpreters are therefore a much reliable and cheaper alternative.

Algorithm Definition:

The algorithm worked as show in the flow chart above. For creating the model, the algorithm worked as the following:

1. Split the dataset into training, validation and testing
2. Take input image from the training dataset
3. Extract features of the image
4. Initialize the weights and vales in the hidden layers
5. Calculate the output and validate it for the expected output using the Validation set
6. Optimize the weight values by continuing to train and validate the model
7. Show the final optimized results, test it against the test set
8. Save the model

Methods: Our project recognizes text in two main steps:

1. Capturing image of the hand showing the sign,

2. Recognition of hand sign.

Results: For the ASL dataset, a total of 10 epoch were run for an accuracy value of 99.7%

Discussion: 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.

B. 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. In this system, still hand image frame is captured using a webcam.