CSI 5325: Project Proposal

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Project Title: American Sign Language Recognition leveraging Machine Learning

Project Description:

American Sign Language (ASL) is a complete, natural language that has the same linguistic properties as spoken languages, with grammar that differs from English. ASL is expressed by movements of the hands and face. It is the primary language of many North Americans who are deaf and hard of hearing, and is used by many hearing people as well.

Knowing sign language is not common between us. So, ASL recognition tool will be very helpful for a normal person to communicate with a deaf or mute person. I also has interest on sign languages, so while working on it, I hope I will be able to learn something from this. That's another reason of choosing this project.

My steps will involve collecting dataset or generating enough data, examine the dataset, build neural model and train the model, and finally test the neural model.

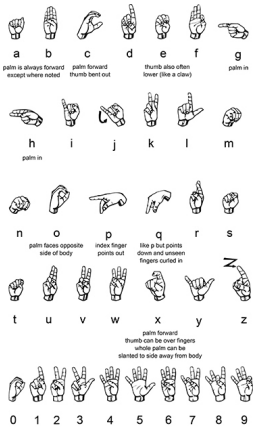

Figure 1: ASL signs

My challenge will be to use live camera and process images for learning and testing the model. Also, there are few alphabets/signs that are almost similar, so it is hard to differentiate between them. Generating a good number of sample data is also challenging and time consuming.

In summary, I am hopeful to learn about machine learning algorithms deeply while executing this fun project.