Project report

Sign language has been a major boon for people who are hearing- and speech-impaired. But it can serve its purpose only when the other person can understand sign language. Thus it would be really nice to have a system which could convert the hand gesture image to the corresponding English letter. And hence, in this project I tried to build an AI model that would predict the english letter for a given image of sign language hand gesture.

I designed a 6 layered convolution neural network model for image classification and trained it using ASL dataset from Kaggle. The dataset was quite large, so it was difficult to train it using the local system. Hence, initially I started working with Sign Language MNIST dataset which was much easier to load and train. And once I achieved a satisfactory result on it, I moved on to ASL Dataset. I used google colab platform where I directly imported the dataset from Kaggle and ran it using GPU. The model achieved an accuracy of 99.56% against a validation accuracy of 99.49%.

I would like to thank my mentor Archan Ghosh for guiding me throughout this project. His constant support is why this project continued even after facing a lot of downs and difficulties. He was always available when I had questions or wanted feedback. He has helped me improve every part of this project from tuning the model to introducing me to new areas of deep learning. His mentorship has been integral in the work that I’ve done on this project.