Synopsis

“Sign Language Detection using Hands Gesture”

Group Code - 04	
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Some of the major problems faced by a person who are unable to speak are They cannot express their emotion as freely in this world. Use that voice recognition and voice search features in smartphone(s). Audio results cannot be retrieved. They are unable to use (Artificial Intelligence/personal Butler) like google assistance, or Apple's SIRI etc because all those apps are based on voice controlling.

We will try implementing such an application which detects pre-defined American signed language (ASL) through hand gestures. For the detection of movement of gesture, we would use cv2 library and an external camera as a hardware requirement is needed.

We have found a MNIST dataset from the following link on Kaggle https://www.kaggle.com/datamunge/sign-language-mnist . So, our application will have two main modules. The frontend will be built on PyQT5 which will comprise of two core module one is that simply detects the gesture and displays appropriate alphabet. The second is after a certain amount of interval period the scanned frame would be stored into buffer so that a string of character could be generated forming a meaningful word.

Additionally, we are trying to build our own custom-based gesture for a special character like period (.) or any delimiter so that a user could form a whole bunch of sentences enhancing this into paragraph and likewise. Whatever the predicted outcome was, it would be stored into a .txt file