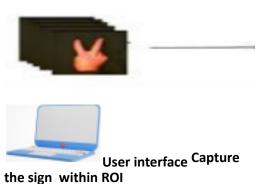
## **Technical Architecture:**

Character : A Word : Sentence : HI I

**Output text** 





Hand movement

Background is popped and original sign is extracted

**Y Y** 

Original Gray-scale Gaussian blur filter to get outline

**End-user** 

Obtain Output text in the form of speech

Table-1: Components & Technologies:

	Treomponents & reamonogies:	
S.No	Component	Description
1.	User Interface	How user interacts with ac usage and clicking the cor
2.	Application Logic-1	<ul> <li>Camera detects the sig</li> <li>Captures the sign with</li> </ul>
3.	Application Logic-2	· Background is popped

4.	Application Logic-3	• Extract the edges of the
5.	Application Logic-4	• Convert the <b>output text</b>
6.	Database	<ul> <li>Binary Large Object(BLC images in the dataset</li> <li>/etc/mysql/my.cnf is the omega.</li> <li>MYSQL that is used.</li> </ul>
7.	File Storage	<ul> <li>Create a BLOB column         JPEG, PNG, PSD or             into the table/column     </li> </ul>
8.	Machine Learning Model	Allows the user to feed a con of data and have the comput recommendations and decision

**Table-2: Application Characteristics:** 

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	<ul> <li>Palm detector operates on full images and outputs an oriented bounding box.</li> <li>Hand landmark takes the cropped image defined by the palm detector and returns 3D hand key points.</li> <li>Gesture recognizer then classifies the previously computed key point configuration into a discrete set of gestures</li> </ul>	Media Pipe Framework is used. Within this framework, the pipeline is built as a directed graph of modular components.

2.	Scalable Architecture	<ul> <li>It's a Three –Tier Architecture comprises the following technology,</li> <li>Convolutional neural network can be scaled in three dimensions: depth, width, resolution.</li> <li>Depth of the network corresponds to the number of layers in a network.</li> <li>Width is associated with the number of neurons in a layer.</li> <li>Resolution is the image resolution that is being passed to CNN.</li> <li>Increasing the depth, by stacking more convolutional layers, allows the network to learn more complex features.</li> </ul>	Convolution Neural Networks is used.
3.	Availability	Hand gestures are the natural way of interactions when one person is communicating with one another and therefore hand movements can be treated as a non verbal form of communication. Hand gesture recognition is a process of understanding and classifying meaningful movements by the human hands	CNN, Media Pipe, Gaussian blur filter, Machine learning models along with Speech assistant is used.