

**Project Design Phase-I**  
**Proposed Solution**  
**Template**

Date	29 September 2022
Team ID	PNT2022TMID46989
Project Name	Project – <b>Real -Time Communication System Powered By AI For Specially Abled</b>
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	<b>To provide an Efficient communication app which translates the hand signs into text and voice mode for deaf and dumb people.</b>
2.	Idea / Solution description	<ul style="list-style-type: none"> <li><b>Convolution Neural Networks</b> are to be used to take hand sign as an input to extract edges, corners.</li> <li>Dataset is used for training CNN. One dataset for <b>hand detection</b> and the other for <b>gesture detection</b>.</li> <li><b>Voice assistant is implemented</b> that take input as speech patterns and convert the text into voice.</li> </ul>
3.	Novelty / Uniqueness	We have number of symbols to be trained for our project and many of them look similar to each other like the <b>gesture for symbol 'V' and digit '2'</b> . To produce better accuracies, <b>we keep the background of hand a stable single colour</b> , so that we don't need to segment it on basis of skin colour.
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> <li>AI enables people with disabilities to <b>lead an independent life with this app</b>.</li> <li><b>Supporting them</b> in activities of daily living .</li> <li><b>It changes the mind set of the disabled, that even they can too be involved in a common conversation like others.</b></li> </ul>
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> <li>Faster and efficient , the <b>concerned text or voice as output is produced, the more it leads to optimize the app with new advancements.</b></li> <li>The productivity is gained and at the same time, <b>leads to improved speed of business.</b></li> </ul>
6.	Scalability of the Solution	<p>A convolutional neural network can be scaled in three dimensions: <i>depth, width, resolution</i>.</p> <ul style="list-style-type: none"> <li><b>Depth</b> of the network corresponds to the number of layers in a network.</li> <li><b>Width</b> is associated with the number of neurons in a layer.</li> <li><b>Resolution</b> is the image resolution that is being passed to CNN.</li> </ul> <p><b>Increasing the depth</b>, by stacking more convolutional layers, allows the network to learn <b>more complex features</b>.</p>