Ideation Phase Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID14822
Project Name	Real-Time Communication System Powered by Al for Specially Abled
Maximum Marks	4 Marks



Brainstorm & idea prioritization

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Define your problem statement

To provide an Efficient communication app which translates the hand signs into text and voice mode for deaf and dumb people.

① 5 minutes

PROBLEM

How can we provide efficent communication system for disabled ones?





Brainstorm

Write down any ideas that come to mind that address your problem statement.

ASWITHA K.G

Media Pipe

framework can

be used for face

detection and

recognize hand,

hand keypoints

DEEPIKA T

When features

are extracted,

they are sent to

the

classification

algos like SVM to

produce output

Convolution **Neural Networks** is to be used to take hand sign as

an input to

extract edges,

corners

Feature extractions like lignments of the finger, palm position are taken into consideration

Hand tracking can be done using clustering algorithms that treat each finger as cluster and identify exact sign

> Support Vector Machine is the clustering algorithm to be used for the hand tracking

BHAVYA L

You can select a sticky note and hit the pencil [switch to

Speech Synthesis

is a software that

converts text to

artificial speech

Approximately,

distance

between hand

and camera is

around 30 to

100cm

sketch] icon to start drawing!

Vision based

recognition is used i.e. the computer capture the sign and find the gesture

If the system

recognize

unrecognizable

gestures, it will

be refreshed

again for users

After

input is stored

frame by frame

into matrix

preprocessing

The input image should be fetched with a speed of 20 frames per

second

Webcamera

capture the hand

movement and

provide as input

to Tensorflow

object detector

System is very

sensitive, it can

catch any image

with the camera

it is necessary to

have clear gestue

identification

If training and testing gestures are matched then voice of

text is generated

AKILANDESWARI S

CNN performs training and verification of the recognized gestures

Dataset is used for training CNN. One dataset for hand detection and the other for gesture detecton

Voice assistant is implemented that take input as speech patterns and convert the text to voice.

Background light either too bright or too dim will result in inaccurate hand

If training and testing gestures are not matched, then System gets refreshed from start



Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

① 20 minutes

Add customizable tags to sticky notes to make it easier to find, themes within your mural.

Media Pipe Hand tracking can Support Vector Convolution framework car be done using Machine is the Neural Networks clustering be used for face is to be used to clustering algorithms that take hand sign as detection and algorithm to be treat each finger an input to extract recognize hand, used for the as cluster and edges, corners hand keypoints identify exact sign hand tracking Feature When features extractions like are extracted, they are sent to alignments of the the classification finger, palm algos like SVM to osition are taker produce output into consideration Voice assistant is CNN performs implemented that training and take input as verification of speech patterns 0 the recognized and convert the gestures text to voice. Importance If each of these Webcamera tasks could get done without any difficulty or cost, which would have the most positive capture the hand movement and provide as input to Tensorflow object detector The input image should be Speech Synthesis is a software that fetched with a converts text to speed of 20 artificial speech frames per second Background sensitive, it can light either too catch any image bright or too with the camera, dim will result in it is necessary to inaccurate hand have clear gestue identification sign



Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.