

# **Brainstorm** & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

( ) 10 minutes to prepare

1 hour to collaborate

2-8 people recommended



#### Define your problem statement

translates the hand signs into text and voice mode for deaf and dumb people.

### **PROBLEM**

How can we provide efficent communication system for disabled ones?



## Key rules of brainstorming To run an smooth and productive session

Encourage wild ideas.

2

Brainstorm

ARUN.R

Media Pipe

framework can

be used for face

detection and

recognize hand,

hand keypoints

To provide an Efficient communication app which

→ 5 minutes

Neural Networks is to be used to take hand sign as an input to extract edges,

corners

Vision based

recognition is

used i.e. the

computer capture

the sign and find

the gesture

Convolution

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

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

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

is a software that converts text to artificial speech

Speech Synthesis

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

sketch] icon to start drawing!

ANANDH.P

Machine is the clustering algorithm to be used for the hand tracking

**Support Vector** 

If training and testing gestures are matched then voice of textisgenerated Approximately, distance between hand and camera is around 30 to 100cm

#### BALAMURUGAN.M

If the system recognize unrecognizable gestures, it will be refreshed again for users

Webcamera capture the hand movement and provide as input to Tensorflow object detector

The input image

should be

fetched with a

speed of 20

frames per

second

When features are extracted. they are sent to the classification algos like SVM to produce output

After preprocessing input is stored frame by frame into matrix

System is very sensitive , it can catch any image with the camera it is necessary to have clear gestue identification

## SATHYANARAYANAN.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.

→ 20 minutes

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

#### Media Pipe Hand tracking can Support Vector Convolution framework can be done using Machine is the **Neural Networks** clustering be used for face is to be used to clustering algorithms that take hand sign a detection and algorithm to be treat each finger an input to extract recognize hand used for the as cluster and identify exact sign hand tracking hand keypoint Feature When features extractions like are extracted they are sent t alignments of the the classificatio finger, palm algos like SVM to position are taker produce output into consideration Voice assistant is CNN performs mplemented that training and take input as verification of 0 speech patterns the recognized and convert the Importance gestures text to voice. If each of these tasks could get done without any Webcamera difficulty or cost, which would have apture the hand movement and the most positive provide as input to Tensorflow object detector The input image should be Speech Synthesis fetched with a is a software that speed of 20 converts textto artificial speech frames per second System is very 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



#### Feasibility

Regardless of their importance, which tasks are more

Share template feedback