Ideation Phase

Empathy Map

Date	01 November 2022
Team ID	PNT2022TMID46015
Project Name	Real Time Communication System Powered By AI For Specially Abled
Maximum Marks	4 Marks

Template

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

Share template feedback

1 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.

5 minutes

PROBLEM

How can we provide efficent communication system for disabled ones?

Key rules of brainstorming

To run an smooth and productive session

- Stay in topic.
- Defer judgment.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

2 Brainstorm

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

10 minutes

TIP
You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

S.AKASH

- Convolution Neural Networks is to be used to take hand sign as an input to extract edges, corners
- Feature extractions like alignments of the finger, palm position are taken into consideration
- Media Pipe framework can be used for face detection and recognize hand, hand keypoints
- Vision based recognition is used i.e. the computer capture the sign and find the gesture
- The input image should be fetched with a speed of 20 frames per second
- After preprocessing , input is stored frame by frame into matrix

K.HARIHARAN

- Hand tracking can be done using clustering algorithms that treat each finger as cluster and identify exact sign
- Speech Synthesis is a software that converts text to artificial speech
- Support Vector Machine is the clustering algorithm to be used for the hand tracking
- If training and testing gestures are matched , then voice of text is generated
- Approximately, distance between hand and camera is around 30 to 100cm
- System is very sensitive , it can catch any image with the camera , it is necessary to have clear gestue identification
- Background light either too bright or too dim will result in inaccurate hand sign
- If training and testing gestures are not matched , then System gets refreshed from start

J.M.DHARMARAJ

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

M.RISABA KARTHEEBAN

- 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.

4 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

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

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Feasibility

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