

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



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.
- Encourage wild ideas.

If possible, be visual.

Convolution 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

Brainstorm

① 10 minutes

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.

SWAAMINAATHAN

Media Pipe

framework can

be used for face

detection and

recognize hand,

hand keypoints

SUNDARESHWAR

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

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

PRASANTH P

If training and testing gestures are matched, then voice of text is generated

Approximately, distance between hand and camera is around 30 to 100cm

Speech Synthesis

is a software that

converts text to

artificial speech

SAKTHIVEL D

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 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

NITHYA GURU B

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

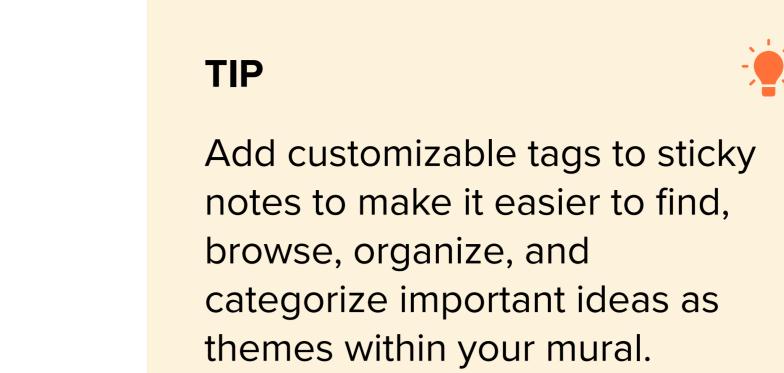
If training and testing gestures are not matched, then System gets refreshed from

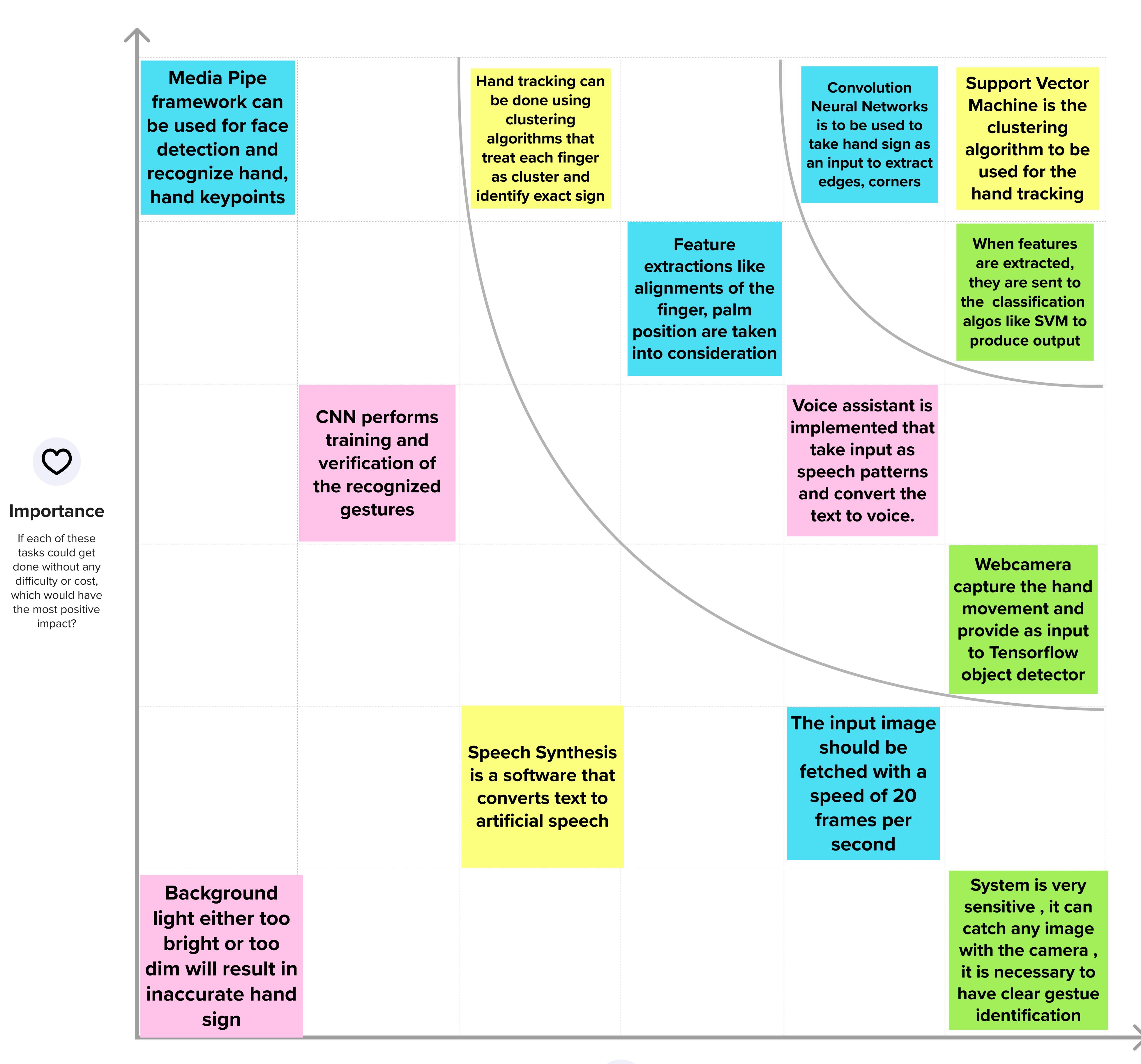


Prioritize

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







Feasibility

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