Github Link: Brunda-Gowda18

Project Title name: Gesture Sign Language Translator using Machine Learning

Sign Language Translator enables the hearing impaired user to communicate efficiently in sign language, and the application will translate the same into text/speech.

The user has to train the model, by recording its own sign language gestures. Internally it uses Mobile Net and KNN classifier to classify the gestures. The user also has the privilege to save the model, upload a pre-trained model, and record gestures while speaking to other people.

It also consists tutorial's page containing 100+ most commonly used phrases , alphabets , etc and a practice page to practice alphabets signs against a deep learning model.

Train Your Own Sign Language:

Practice Your Alphabet Sign Language (ASL)

```javascript
const createKNNClassifier = async () => {
    console.log('Loading KNN Classifier');
    return await knnClassifier.create();
};
const createMobileNetModel = async () => {
    console.log('Loading Mobilenet Model');
    return await mobilenet.load();
};
const createWebcamInput = async () => {
    console.log('Loading Webcam Input');
    const webcamElement = await document.getElementById('webcam');
    return await tf.data.webcam(webcamElement);
};

const mobilenetModel = await createMobileNetModel();
const knnClassifierModel = await createKNNClassifier();
const webcamInput = await createWebcamInput();
var preloader = document.getElementById("loading");
```
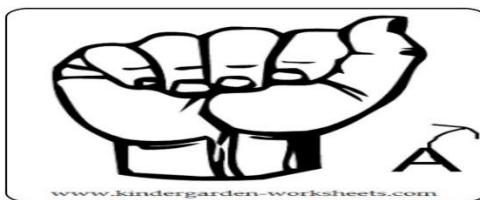
The Learning Spot 👉

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Most Commonly Used Phrases ✦

Shall i help you	Hello
Lets go for lunch	I am fine
Nice to Meet you	Take Care
What is your name	I am Sorry
Please call me later	Be Careful
What is today's date	Open the door
Do you have money	Any Questions
Where is the bathroom	Are you Hungry

Alphabets ↕

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
S	T	U	V	W	X
		Y	Z		

Place, Time and Objects ⏰

Shop	Cat
Punjab	July
Temple	Pune
Mumbai	Bridge
Saturday	Grapes
Wednesday	Banglore
Police station	December

Practice Alphabets and Phrases Machine learning Model

Input Images → MobileNet Feature Extracion → KNN Classifier (Class A, Class B, X_1, X_2, $k = 3$, $k = 6$) → Prediction

A B C D E

F G H I

J K L M N

O P Q R

S T U V W

X Y Z