Project: Real-Time Communication System Powered by AI for Specially Abled

Team ID: PNT2022TMID09233

Team Members: Abubucker Siddique, Adarsh Srinivas, Ashwath, Jayasurya

In [1]:
```
from keras.models import load_model
from keras.models import Sequential
import numpy as np
import cv2
```

```
Using TensorFlow backend.
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:516: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  _np_qint8 = np.dtype([("qint8", np.int8, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:517: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  _np_quint8 = np.dtype([("quint8", np.uint8, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:518: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  _np_qint16 = np.dtype([("qint16", np.int16, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:519: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  _np_quint16 = np.dtype([("quint16", np.uint16, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:520: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  _np_qint32 = np.dtype([("qint32", np.int32, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorflow
\python\framework\dtypes.py:525: FutureWarning: Passing (type, 1) or '1type' as a
synonym of type is deprecated; in a future version of numpy, it will be understood
as (type, (1,)) / '(1,)type'.
  np_resource = np.dtype([("resource", np.ubyte, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:541: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  _np_qint8 = np.dtype([("qint8", np.int8, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:542: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  _np_quint8 = np.dtype([("quint8", np.uint8, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:543: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  _np_qint16 = np.dtype([("qint16", np.int16, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:544: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  _np_quint16 = np.dtype([("quint16", np.uint16, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:545: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  _np_qint32 = np.dtype([("qint32", np.int32, 1)])
c:\users\adars\appdata\local\programs\python\python37\lib\site-packages\tensorboar
d\compat\tensorflow_stub\dtypes.py:550: FutureWarning: Passing (type, 1) or '1typ
e' as a synonym of type is deprecated; in a future version of numpy, it will be un
derstood as (type, (1,)) / '(1,)type'.
  np_resource = np.dtype([("resource", np.ubyte, 1)])
```

In [2]:
```
model=load_model('signlanguage.h5')
```

```
WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:517: The name tf.placeholder is
deprecated. Please use tf.compat.v1.placeholder instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:4138: The name tf.random_unifor
m is deprecated. Please use tf.random.uniform instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:3976: The name tf.nn.max_pool i
s deprecated. Please use tf.nn.max_pool2d instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:174: The name tf.get_default_se
ssion is deprecated. Please use tf.compat.v1.get_default_session instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:181: The name tf.ConfigProto is
deprecated. Please use tf.compat.v1.ConfigProto instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\backend\tensorflow_backend.py:186: The name tf.Session is dep
recated. Please use tf.compat.v1.Session instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\keras\optimizers.py:790: The name tf.train.Optimizer is deprecated.
Please use tf.compat.v1.train.Optimizer instead.

WARNING:tensorflow:From c:\users\adars\appdata\local\programs\python\python37\lib
\site-packages\tensorflow\python\ops\math_grad.py:1250: add_dispatch_support.<loca
ls>.wrapper (from tensorflow.python.ops.array_ops) is deprecated and will be remov
ed in a future version.
Instructions for updating:
Use tf.where in 2.0, which has the same broadcast rule as np.where
```

In [19]:

```
from skimage.transform import resize

def detect(frame):
    img = resize(frame,(64,64,1))
    img = np.expand_dims(img,axis=0)
    if(np.max(img)>1):
        img = img/255.0
    prediction = model.predict(img)
    print(prediction)
    predictions = model.predict_classes(img)
    print(predictions)
```

In [21]:

```
frame = cv2.imread(r"dataset/test_set/G/1.png")
data = detect(frame)
```

```
[[1.1529493e-09 1.6801257e-12 3.0758306e-07 3.6168924e-08 2.1814937e-11
  6.9361130e-09 9.9995184e-01 4.7746969e-05 3.6307211e-09]]
[6]
```