

# Real –Time Communication System Powered by AI for Specially Abled

## Team ID : PNT2022TMID14463

### Model Building

#### Import The Required Model Building Libraries

```
#import imagedatagenerator
from keras.preprocessing.image import ImageDataGenerator

#training datagen
train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizontal_flip=True)

#testing datagen
test_datagen=ImageDataGenerator(rescale=1./255)

IMPORTING tensorflow
```

```
import tensorflow as tf
import os
```

#### Initialize The Model

```
#create model
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import Convolution2D
from keras.layers import MaxPooling2D
from keras.layers import Dropout
from keras.layers import Flatten
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

```
import numpy as np
import matplotlib.pyplot as plt #to view graph in colab itself
import IPython.display as display
from PIL import Image
import pathlib

Unzipping the dataset
```

```
!unzip '/content/conversation engine for deaf and dumb (1).zip'
```

**Streaming output truncated to the last 5000 lines.**

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extracting: Dataset/training\_set/I/1517.png

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inflating: Dataset/training\_set/I/893.png  
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inflating: Dataset/training\_set/I/896.png  
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inflating: Dataset/training\_set/I/899.png  
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inflating: Dataset/training\_set/I/906.png  
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inflating: Dataset/training\_set/I/91.png  
inflating: Dataset/training\_set/I/910.png  
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[illegible]



inflating: Dataset/training\_set/I/97.png  
inflating: Dataset/training\_set/I/970.png  
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inflating: Dataset/training\_set/I/999.png  
Applying ImageDataGenerator to training set

```
x_train=train_datagen.flow_from_directory('/content/Dataset/training_set',target_size=(64,64),batch_size=200,  
                                         class_mode='categorical',color_mode="grayscale")
```

Found 15750 images belonging to 9 classes.

Applying ImageDataGenerator to test set

```
x_test=test_datagen.flow_from_directory('/content/Dataset/test_set',target_size=(64,64),batch_size=200,  
                                       class_mode='categorical',color_mode="grayscale")
```

Found 2250 images belonging to 9 classes.

```
a=len(x_train)
```

```
b=len(x_test)
```

Length of training set

```
print(a)
```

79

Length of test set

```
print(b)
```

12

### **Add Layers**

*#create model*

model=Sequential()

Add The Convolution Layer

model.add(Convolution2D(32,(3,3),input\_shape=(64,64,1),activation='relu'))