

Image Preprocessing

```
!unzip '/content/drive/MyDrive/project/conversation engine for deaf and dumb.zip'
```

```
inflating: Dataset/training_set/I/928.png
inflating: Dataset/training_set/I/929.png
inflating: Dataset/training_set/I/93.png
inflating: Dataset/training_set/I/930.png
inflating: Dataset/training_set/I/931.png
inflating: Dataset/training_set/I/932.png
inflating: Dataset/training_set/I/933.png
inflating: Dataset/training_set/I/934.png
inflating: Dataset/training_set/I/935.png
inflating: Dataset/training_set/I/936.png
inflating: Dataset/training_set/I/937.png
inflating: Dataset/training_set/I/938.png
inflating: Dataset/training_set/I/939.png
inflating: Dataset/training_set/I/94.png
inflating: Dataset/training_set/I/940.png
inflating: Dataset/training_set/I/941.png
inflating: Dataset/training_set/I/942.png
inflating: Dataset/training_set/I/943.png
inflating: Dataset/training_set/I/944.png
inflating: Dataset/training_set/I/945.png
inflating: Dataset/training_set/I/946.png
inflating: Dataset/training_set/I/947.png
inflating: Dataset/training_set/I/948.png
inflating: Dataset/training_set/I/949.png
inflating: Dataset/training_set/I/95.png
inflating: Dataset/training_set/I/950.png
inflating: Dataset/training_set/I/951.png
inflating: Dataset/training_set/I/952.png
inflating: Dataset/training_set/I/953.png
inflating: Dataset/training_set/I/954.png
inflating: Dataset/training_set/I/955.png
inflating: Dataset/training_set/I/956.png
inflating: Dataset/training_set/I/957.png
inflating: Dataset/training_set/I/958.png
inflating: Dataset/training_set/I/959.png
inflating: Dataset/training_set/I/96.png
inflating: Dataset/training_set/I/960.png
inflating: Dataset/training_set/I/961.png
inflating: Dataset/training_set/I/962.png
inflating: Dataset/training_set/I/963.png
inflating: Dataset/training_set/I/964.png
inflating: Dataset/training_set/I/965.png
inflating: Dataset/training_set/I/966.png
inflating: Dataset/training_set/I/967.png
inflating: Dataset/training_set/I/968.png
inflating: Dataset/training_set/I/969.png
inflating: Dataset/training_set/I/97.png
inflating: Dataset/training_set/I/970.png
inflating: Dataset/training_set/I/971.png
inflating: Dataset/training_set/I/972.png
extracting: Dataset/training_set/I/973.png
inflating: Dataset/training_set/I/974.png
inflating: Dataset/training_set/I/975.png
inflating: Dataset/training_set/I/976.png
```

```
inflating: Dataset/training_set/I/976.png  
inflating: Dataset/training_set/I/977.png  
inflating: Dataset/training_set/I/978.png  
inflating: Dataset/training_set/I/979.png  
inflating: Dataset/training_set/I/98.png
```

```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

```
train_datagen = ImageDataGenerator(rescale=1/255, zoom_range=0.2, horizontal_flip=True, verti  
test_datagen = ImageDataGenerator(rescale=1/255)
```

```
cd/content/drive/MyDrive
```

```
    /content/drive/MyDrive
```

```
x_train = train_datagen.flow_from_directory('/content/drive/MyDrive/Dataset/training_set',  
Found 15750 images belonging to 9 classes.
```

```
x_test = test_datagen.flow_from_directory('/content/drive/MyDrive/Dataset/test_set', target  
Found 2250 images belonging to 9 classes.
```

```
x_train.class_indices
```

```
{'A': 0, 'B': 1, 'C': 2, 'D': 3, 'E': 4, 'F': 5, 'G': 6, 'H': 7, 'I': 8}
```