

Image_Preprocessing

November 20, 2022

Import Drive to Google Colaboratory

```
[ ]: from google.colab import drive
```

```
[ ]: drive.mount("/content/drive", force_remount=True)
```

Mounted at /content/drive

```
[ ]: !unzip "/content/drive/MyDrive/Classification of Arrhythmia by Using Deep_
↳ Learning with 2-D ECG Spectral Image Representation.zip"
```

Streaming output truncated to the last 5000 lines.

```
inflating: data/train/Premature Ventricular Contractions/fig_1532.png
inflating: data/train/Premature Ventricular Contractions/fig_1533.png
inflating: data/train/Premature Ventricular Contractions/fig_1534.png
inflating: data/train/Premature Ventricular Contractions/fig_1535.png
inflating: data/train/Premature Ventricular Contractions/fig_1536.png
inflating: data/train/Premature Ventricular Contractions/fig_1537.png
inflating: data/train/Premature Ventricular Contractions/fig_1538.png
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inflating: data/train/Premature Ventricular Contractions/fig_154.png
inflating: data/train/Premature Ventricular Contractions/fig_1540.png
inflating: data/train/Premature Ventricular Contractions/fig_1541.png
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```


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```

inflating: data/train/Ventricular Fibrillation/VFEfig_70.png
inflating: data/train/Ventricular Fibrillation/VFEfig_71.png
inflating: data/train/Ventricular Fibrillation/VFEfig_72.png
inflating: data/train/Ventricular Fibrillation/VFEfig_73.png
inflating: data/train/Ventricular Fibrillation/VFEfig_74.png
inflating: data/train/Ventricular Fibrillation/VFEfig_75.png
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inflating: data/train/Ventricular Fibrillation/VFEfig_96.png
inflating: data/train/Ventricular Fibrillation/VFEfig_97.png
inflating: data/train/Ventricular Fibrillation/VFEfig_98.png
inflating: data/train/Ventricular Fibrillation/VFEfig_99.png

```

```

[ ]: from tensorflow.keras.models import Sequential
    from tensorflow.keras.layers import Dense
    from tensorflow.keras.layers import Convolution2D
    from tensorflow.keras.layers import MaxPooling2D
    from tensorflow.keras.layers import Flatten

```

Import The Image Data Generator Library to train and test data

```

[ ]: from tensorflow.keras.preprocessing.image import ImageDataGenerator

```

```

[ ]: train_datagen = ImageDataGenerator(rescale = 1./255, shear_range = 0.
    ↪2, zoom_range = 0.2, horizontal_flip = True)
    test_datagen = ImageDataGenerator(rescale = 1./255)

```

Apply Image Data Generator Functionality To Trainset and Testset

```
[ ]: x_train = train_datagen.flow_from_directory("/content/data/train",target_size =  
      ↳(64,64),batch_size = 32,class_mode = "categorical")  
x_test = test_datagen.flow_from_directory("/content/data/test",target_size =  
      ↳(64,64),batch_size = 32,class_mode = "categorical")
```

Found 15341 images belonging to 6 classes.

Found 6825 images belonging to 6 classes.

Configure Image Data Generator Class

```
[ ]: x_train.class_indices
```

```
[ ]: {'Left Bundle Branch Block': 0,  
      'Normal': 1,  
      'Premature Atrial Contraction': 2,  
      'Premature Ventricular Contractions': 3,  
      'Right Bundle Branch Block': 4,  
      'Ventricular Fibrillation': 5}
```