

Project Development Phase Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID17913
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	10 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Model Summary	-	<pre> Model: "sequential_1" Layer (type) Output Shape Param # ----- conv2d_1 (Conv2D) (None, 62, 62, 32) 896 max_pooling2d (MaxPooling2D) (None, 31, 31, 32) 0 conv2d_2 (Conv2D) (None, 29, 29, 32) 9248 max_pooling2d_1 (MaxPooling2D) (None, 14, 14, 32) 0 flatten (Flatten) (None, 6272) 0 dense (Dense) (None, 32) 200736 dense_1 (Dense) (None, 6) 198 Total params: 211,078 Trainable params: 211,078 Non-trainable params: 0 </pre>
2.	Accuracy	Training Accuracy - 96% Validation Accuracy - 90%	<pre> Train on 10000 steps: loss: 0.1500 - accuracy: 0.9500 - val_loss: 0.2500 - val_accuracy: 0.9000 Test on 10000 steps: loss: 0.1500 - accuracy: 0.9500 - val_loss: 0.2500 - val_accuracy: 0.9000 Train on 10000 steps: loss: 0.1500 - accuracy: 0.9500 - val_loss: 0.2500 - val_accuracy: 0.9000 Test on 10000 steps: loss: 0.1500 - accuracy: 0.9500 - val_loss: 0.2500 - val_accuracy: 0.9000 </pre>

Model Summary:

Model: "sequential_1"

Layer (type)	Output Shape	Param #
conv2d_1 (Conv2D)	(None, 62, 62, 32)	896
max_pooling2d (MaxPooling2D)	(None, 31, 31, 32)	0
conv2d_2 (Conv2D)	(None, 29, 29, 32)	9248
max_pooling2d_1 (MaxPooling2D)	(None, 14, 14, 32)	0
flatten (Flatten)	(None, 6272)	0
dense (Dense)	(None, 32)	200736
dense_1 (Dense)	(None, 6)	198

Total params: 211,078
 Trainable params: 211,078
 Non-trainable params: 0

Model Accuracy:

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Epoch 7/10
480/480 [=====] - 34s 70ms/step - loss: 0.1545 - accuracy: 0.9530 - val_loss: 0.2707 - val_accuracy: 0.9187
Epoch 8/10
480/480 [=====] - 33s 68ms/step - loss: 0.1362 - accuracy: 0.9580 - val_loss: 0.3744 - val_accuracy: 0.8859
Epoch 9/10
480/480 [=====] - 34s 71ms/step - loss: 0.1344 - accuracy: 0.9585 - val_loss: 0.3191 - val_accuracy: 0.9027
Epoch 10/10
480/480 [=====] - 33s 69ms/step - loss: 0.1201 - accuracy: 0.9633 - val_loss: 0.3093 - val_accuracy: 0.9068
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