

Project Development Phase
Model Performance Test

Date	9 November 2023
Team ID	592869
Project Name	Lip Reading using Deep Learning
Team Members	Madhav Sonu Kumar Gyaneshwer Jha Jodgudri Pratik Shivamurti

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot																																																
1.	Model Summary	<div>Model: "sequential_1"</div> <div><table><thead><tr><th>Layer (type)</th><th>Output Shape</th><th>Param #</th></tr></thead><tbody><tr><td>conv3d_3 (Conv3D)</td><td>(None, 75, 46, 140, 128)</td><td>3584</td></tr><tr><td>activation_3 (Activation)</td><td>(None, 75, 46, 140, 128)</td><td>0</td></tr><tr><td>max_pooling3d_3 (MaxPooling3D)</td><td>(None, 75, 23, 70, 128)</td><td>0</td></tr><tr><td>conv3d_4 (Conv3D)</td><td>(None, 75, 23, 70, 256)</td><td>884992</td></tr><tr><td>activation_4 (Activation)</td><td>(None, 75, 23, 70, 256)</td><td>0</td></tr></tbody></table></div>	Layer (type)	Output Shape	Param #	conv3d_3 (Conv3D)	(None, 75, 46, 140, 128)	3584	activation_3 (Activation)	(None, 75, 46, 140, 128)	0	max_pooling3d_3 (MaxPooling3D)	(None, 75, 23, 70, 128)	0	conv3d_4 (Conv3D)	(None, 75, 23, 70, 256)	884992	activation_4 (Activation)	(None, 75, 23, 70, 256)	0	<div><table><thead><tr><th>Layer (type)</th><th>Output Shape</th><th>Param #</th></tr></thead><tbody><tr><td>conv3d_3 (Conv3D)</td><td>(None, 75, 46, 140, 128)</td><td>3584</td></tr><tr><td>activation_3 (Activation)</td><td>(None, 75, 46, 140, 128)</td><td>0</td></tr><tr><td>max_pooling3d_3 (MaxPooling3D)</td><td>(None, 75, 23, 70, 128)</td><td>0</td></tr><tr><td>conv3d_4 (Conv3D)</td><td>(None, 75, 23, 70, 256)</td><td>884992</td></tr><tr><td>activation_4 (Activation)</td><td>(None, 75, 23, 70, 256)</td><td>0</td></tr><tr><td>max_pooling3d_4 (MaxPooling3D)</td><td>(None, 75, 11, 35, 256)</td><td>0</td></tr><tr><td>conv3d_5 (Conv3D)</td><td>(None, 75, 11, 35, 75)</td><td>518475</td></tr><tr><td>activation_5 (Activation)</td><td>(None, 75, 11, 35, 75)</td><td>0</td></tr><tr><td>max_pooling3d_5 (MaxPooling3D)</td><td>(None, 75, 5, 17, 75)</td><td>0</td></tr></tbody></table></div>	Layer (type)	Output Shape	Param #	conv3d_3 (Conv3D)	(None, 75, 46, 140, 128)	3584	activation_3 (Activation)	(None, 75, 46, 140, 128)	0	max_pooling3d_3 (MaxPooling3D)	(None, 75, 23, 70, 128)	0	conv3d_4 (Conv3D)	(None, 75, 23, 70, 256)	884992	activation_4 (Activation)	(None, 75, 23, 70, 256)	0	max_pooling3d_4 (MaxPooling3D)	(None, 75, 11, 35, 256)	0	conv3d_5 (Conv3D)	(None, 75, 11, 35, 75)	518475	activation_5 (Activation)	(None, 75, 11, 35, 75)	0	max_pooling3d_5 (MaxPooling3D)	(None, 75, 5, 17, 75)	0
Layer (type)	Output Shape	Param #																																																	
conv3d_3 (Conv3D)	(None, 75, 46, 140, 128)	3584																																																	
activation_3 (Activation)	(None, 75, 46, 140, 128)	0																																																	
max_pooling3d_3 (MaxPooling3D)	(None, 75, 23, 70, 128)	0																																																	
conv3d_4 (Conv3D)	(None, 75, 23, 70, 256)	884992																																																	
activation_4 (Activation)	(None, 75, 23, 70, 256)	0																																																	
Layer (type)	Output Shape	Param #																																																	
conv3d_3 (Conv3D)	(None, 75, 46, 140, 128)	3584																																																	
activation_3 (Activation)	(None, 75, 46, 140, 128)	0																																																	
max_pooling3d_3 (MaxPooling3D)	(None, 75, 23, 70, 128)	0																																																	
conv3d_4 (Conv3D)	(None, 75, 23, 70, 256)	884992																																																	
activation_4 (Activation)	(None, 75, 23, 70, 256)	0																																																	
max_pooling3d_4 (MaxPooling3D)	(None, 75, 11, 35, 256)	0																																																	
conv3d_5 (Conv3D)	(None, 75, 11, 35, 75)	518475																																																	
activation_5 (Activation)	(None, 75, 11, 35, 75)	0																																																	
max_pooling3d_5 (MaxPooling3D)	(None, 75, 5, 17, 75)	0																																																	

		<p>max_pooling3d_4 (MaxPoolin (None, 75, 11, 35, 256) 0 g3D)</p> <p>conv3d_5 (Conv3D) (None, 75, 11, 35, 75) 518475</p> <p>activation_5 (Activation) (None, 75, 11, 35, 75) 0</p> <p>max_pooling3d_5 (MaxPoolin (None, 75, 5, 17, 75) 0 g3D)</p> <p>time_distributed_1 (TimeDi (None, 75, 6375) 0 stributed)</p> <p>bidirectional_2 (Bidirecti (None, 75, 256) 6660096 onal)</p> <p>dropout_2 (Dropout) (None, 75, 256) 0</p> <p>bidirectional_3 (Bidirecti (None, 75, 256) 394240 onal)</p> <p>dropout_3 (Dropout) (None, 75, 256) 0</p> <p>dense_1 (Dense) (None, 75, 41) 10537</p> <p>=====</p> <p>=====</p> <p>Total params: 8471924 (32.32 MB) Trainable params: 8471924 (32.32 MB) Non-trainable params: 0 (0.00 Byte)</p>	<pre> time_distributed_1 (TimeDi (None, 75, 6375) 0 stributed) bidirectional_2 (Bidirecti (None, 75, 256) 6660096 onal) dropout_2 (Dropout) (None, 75, 256) 0 bidirectional_3 (Bidirecti (None, 75, 256) 394240 onal) dropout_3 (Dropout) (None, 75, 256) 0 dense_1 (Dense) (None, 75, 41) 10537 ===== Total params: 8471924 (32.32 MB) Trainable params: 8471924 (32.32 MB) Non-trainable params: 0 (0.00 Byte) </pre>
2.	Accuracy	<p>Training Accuracy – 95.47%</p> <p>Validation Accuracy – 90.61%</p>	