The X_train size is  torch.Size([424, 100, 75])

The y_train size is  torch.Size([424, 1])

The X_test size is  torch.Size([106, 100, 75])

The y_test size is  torch.Size([106, 1])

The cuda device is  cpu

The frame size is  (56, 75)

The number of frames are  2  , the frame size is  50  and stride is  50

Current device: cpu

Model output is  tensor([0.5178], grad_fn=<SigmoidBackward0>)

The no. of frames are  2

The hyperparameters are : model_dim is = 8 , num_heads = 4 , dim_feedforward = 8 , num_layers = 6 , dropout = 0.2 , stride = 50 , frame_size = 50 , dense_layer_neurons = 118 , epochs = 100, learning_rate = 1e-05

Epoch [1/100], Loss: 0.8068  Val loss: 0.6971  Best model at epoch: 0

Epoch [2/100], Loss: 0.7853  Val loss: 0.7073  Best model at epoch: 0

Epoch [3/100], Loss: 0.7412  Val loss: 0.6837  Best model at epoch: 0

Epoch [4/100], Loss: 0.7476  Val loss: 0.6719  Best model at epoch: 0

Epoch [5/100], Loss: 0.7239  Val loss: 0.6753  Best model at epoch: 0

Epoch [6/100], Loss: 0.7065  Val loss: 0.6713  Best model at epoch: 0

Epoch [7/100], Loss: 0.6962  Val loss: 0.6672  Best model at epoch: 0

Epoch [8/100], Loss: 0.6858  Val loss: 0.6530  Best model at epoch: 0

Epoch [9/100], Loss: 0.6789  Val loss: 0.6573  Best model at epoch: 0

Epoch [10/100], Loss: 0.6761  Val loss: 0.6556  Best model at epoch: 0

Epoch [11/100], Loss: 0.6701  Val loss: 0.6495  Best model at epoch: 0

Epoch [12/100], Loss: 0.6777  Val loss: 0.6508  Best model at epoch: 0

Epoch [13/100], Loss: 0.6692  Val loss: 0.6464  Best model at epoch: 0

Epoch [14/100], Loss: 0.6680  Val loss: 0.6461  Best model at epoch: 0

Epoch [15/100], Loss: 0.6641  Val loss: 0.6471  Best model at epoch: 0

Epoch [16/100], Loss: 0.6650  Val loss: 0.6434  Best model at epoch: 0

Epoch [17/100], Loss: 0.6597  Val loss: 0.6463  Best model at epoch: 17

Epoch [18/100], Loss: 0.6584  Val loss: 0.6395  Best model at epoch: 18

Epoch [19/100], Loss: 0.6556  Val loss: 0.6433  Best model at epoch: 18

Epoch [20/100], Loss: 0.6519 Val loss: 0.6453 Best model at epoch: 18

Epoch [21/100], Loss: 0.6552 Val loss: 0.6350 Best model at epoch: 21

Epoch [22/100], Loss: 0.6546 Val loss: 0.6355 Best model at epoch: 21

Epoch [23/100], Loss: 0.6521 Val loss: 0.6359 Best model at epoch: 21

Epoch [24/100], Loss: 0.6485 Val loss: 0.6351 Best model at epoch: 21

Epoch [25/100], Loss: 0.6491 Val loss: 0.6348 Best model at epoch: 25

Epoch [26/100], Loss: 0.6539 Val loss: 0.6341 Best model at epoch: 26

Epoch [27/100], Loss: 0.6465 Val loss: 0.6342 Best model at epoch: 26

Epoch [28/100], Loss: 0.6492 Val loss: 0.6309 Best model at epoch: 28

Epoch [29/100], Loss: 0.6470 Val loss: 0.6295 Best model at epoch: 29

Epoch [30/100], Loss: 0.6460 Val loss: 0.6317 Best model at epoch: 29

Epoch [31/100], Loss: 0.6410 Val loss: 0.6283 Best model at epoch: 31

Epoch [32/100], Loss: 0.6433 Val loss: 0.6315 Best model at epoch: 31

Epoch [33/100], Loss: 0.6372 Val loss: 0.6313 Best model at epoch: 31

Epoch [34/100], Loss: 0.6436 Val loss: 0.6337 Best model at epoch: 31

Epoch [35/100], Loss: 0.6403 Val loss: 0.6283 Best model at epoch: 31

Epoch [36/100], Loss: 0.6414 Val loss: 0.6337 Best model at epoch: 31

Epoch [37/100], Loss: 0.6392 Val loss: 0.6274 Best model at epoch: 37

Epoch [38/100], Loss: 0.6332 Val loss: 0.6269 Best model at epoch: 38

Epoch [39/100], Loss: 0.6402 Val loss: 0.6264 Best model at epoch: 39

Epoch [40/100], Loss: 0.6371 Val loss: 0.6245 Best model at epoch: 40

Epoch [41/100], Loss: 0.6330 Val loss: 0.6264 Best model at epoch: 40

Epoch [42/100], Loss: 0.6345 Val loss: 0.6253 Best model at epoch: 40

Epoch [43/100], Loss: 0.6330 Val loss: 0.6238 Best model at epoch: 43

Epoch [44/100], Loss: 0.6327 Val loss: 0.6253 Best model at epoch: 43

Epoch [45/100], Loss: 0.6339 Val loss: 0.6264 Best model at epoch: 43

Epoch [46/100], Loss: 0.6354 Val loss: 0.6231 Best model at epoch: 46

Epoch [47/100], Loss: 0.6372 Val loss: 0.6272 Best model at epoch: 46

Epoch [48/100], Loss: 0.6283 Val loss: 0.6275 Best model at epoch: 46

Epoch [49/100], Loss: 0.6316 Val loss: 0.6286 Best model at epoch: 46

Epoch [50/100], Loss: 0.6288 Val loss: 0.6245 Best model at epoch: 46

Epoch [51/100], Loss: 0.6283 Val loss: 0.6226 Best model at epoch: 51

Epoch [52/100], Loss: 0.6274 Val loss: 0.6245 Best model at epoch: 51

Epoch [53/100], Loss: 0.6303 Val loss: 0.6276 Best model at epoch: 51

Epoch [54/100], Loss: 0.6277 Val loss: 0.6257 Best model at epoch: 51

Epoch [55/100], Loss: 0.6271 Val loss: 0.6257 Best model at epoch: 51

Epoch [56/100], Loss: 0.6277 Val loss: 0.6259 Best model at epoch: 51

Epoch [57/100], Loss: 0.6268 Val loss: 0.6236 Best model at epoch: 51

Epoch [58/100], Loss: 0.6233 Val loss: 0.6264 Best model at epoch: 51

Epoch [59/100], Loss: 0.6252 Val loss: 0.6237 Best model at epoch: 51

Epoch [60/100], Loss: 0.6273 Val loss: 0.6240 Best model at epoch: 51

Epoch [61/100], Loss: 0.6285 Val loss: 0.6251 Best model at epoch: 51

Epoch [62/100], Loss: 0.6255 Val loss: 0.6226 Best model at epoch: 62

Epoch [63/100], Loss: 0.6262 Val loss: 0.6218 Best model at epoch: 63

Epoch [64/100], Loss: 0.6253 Val loss: 0.6229 Best model at epoch: 63

Epoch [65/100], Loss: 0.6191 Val loss: 0.6213 Best model at epoch: 65

Epoch [66/100], Loss: 0.6232 Val loss: 0.6215 Best model at epoch: 65

Epoch [67/100], Loss: 0.6275 Val loss: 0.6206 Best model at epoch: 67

Epoch [68/100], Loss: 0.6250 Val loss: 0.6228 Best model at epoch: 67

Epoch [69/100], Loss: 0.6245 Val loss: 0.6204 Best model at epoch: 69

Epoch [70/100], Loss: 0.6199 Val loss: 0.6227 Best model at epoch: 69

Epoch [71/100], Loss: 0.6215 Val loss: 0.6209 Best model at epoch: 69

Epoch [72/100], Loss: 0.6188 Val loss: 0.6212 Best model at epoch: 69

Epoch [73/100], Loss: 0.6234 Val loss: 0.6213 Best model at epoch: 69

Epoch [74/100], Loss: 0.6201 Val loss: 0.6195 Best model at epoch: 74

Epoch [75/100], Loss: 0.6175 Val loss: 0.6185 Best model at epoch: 75

Epoch [76/100], Loss: 0.6167 Val loss: 0.6171 Best model at epoch: 76

Epoch [77/100], Loss: 0.6200 Val loss: 0.6206 Best model at epoch: 76

Epoch [78/100], Loss: 0.6204 Val loss: 0.6206 Best model at epoch: 76

Epoch [79/100], Loss: 0.6184 Val loss: 0.6185 Best model at epoch: 76

Epoch [80/100], Loss: 0.6176 Val loss: 0.6182 Best model at epoch: 76

Epoch [81/100], Loss: 0.6166 Val loss: 0.6216 Best model at epoch: 76

Epoch [82/100], Loss: 0.6171 Val loss: 0.6191 Best model at epoch: 76

Epoch [83/100], Loss: 0.6165 Val loss: 0.6154 Best model at epoch: 83

Epoch [84/100], Loss: 0.6177 Val loss: 0.6158 Best model at epoch: 83

Epoch [85/100], Loss: 0.6167 Val loss: 0.6150 Best model at epoch: 85

Epoch [86/100], Loss: 0.6152 Val loss: 0.6154 Best model at epoch: 85

Epoch [87/100], Loss: 0.6161 Val loss: 0.6156 Best model at epoch: 85

Epoch [88/100], Loss: 0.6177 Val loss: 0.6134 Best model at epoch: 88

Epoch [89/100], Loss: 0.6181 Val loss: 0.6135 Best model at epoch: 88

Epoch [90/100], Loss: 0.6169 Val loss: 0.6133 Best model at epoch: 90

Epoch [91/100], Loss: 0.6175 Val loss: 0.6120 Best model at epoch: 91

Epoch [92/100], Loss: 0.6170 Val loss: 0.6143 Best model at epoch: 91

Epoch [93/100], Loss: 0.6159 Val loss: 0.6120 Best model at epoch: 91

Epoch [94/100], Loss: 0.6139 Val loss: 0.6126 Best model at epoch: 91

Epoch [95/100], Loss: 0.6146 Val loss: 0.6117 Best model at epoch: 95

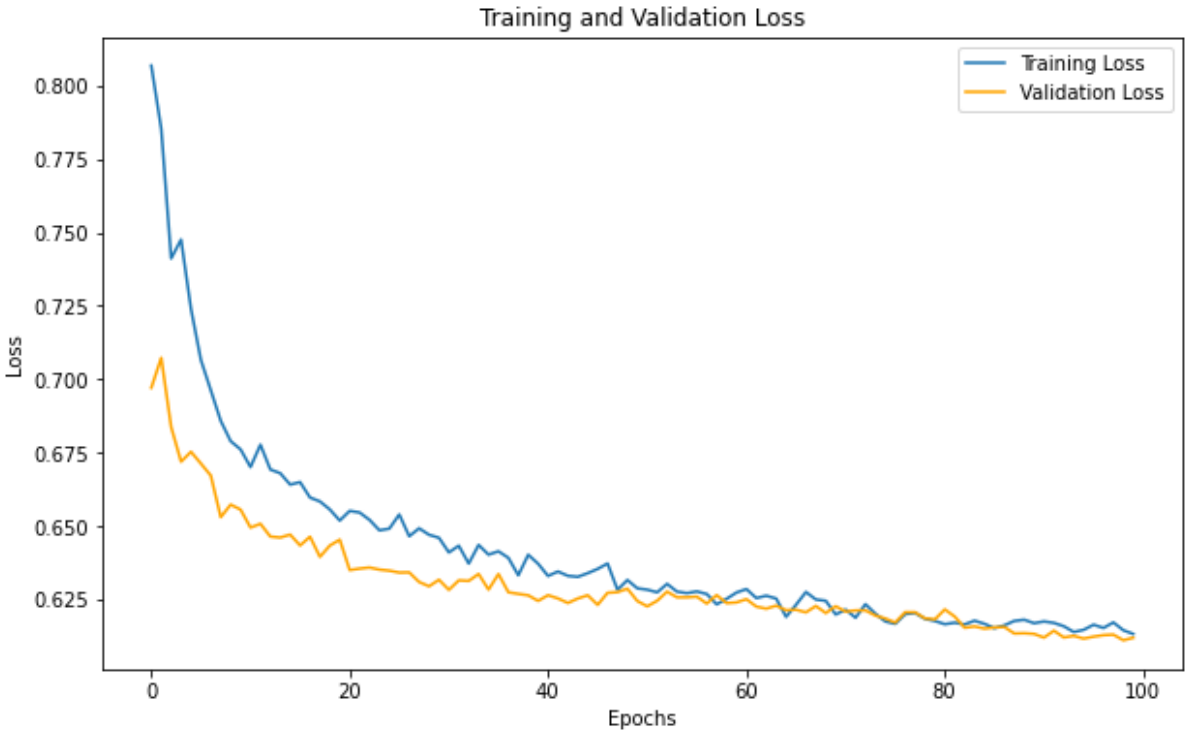
Epoch [96/100], Loss: 0.6164 Val loss: 0.6123 Best model at epoch: 95

Epoch [97/100], Loss: 0.6153 Val loss: 0.6128 Best model at epoch: 95

Epoch [98/100], Loss: 0.6172 Val loss: 0.6130 Best model at epoch: 95

Epoch [99/100], Loss: 0.6145 Val loss: 0.6111 Best model at epoch: 99

Epoch [100/100], Loss: 0.6132 Val loss: 0.6119 Best model at epoch: 99




Total time in seconds :  5947.102057933807

The best model was found at epoch number  99

--- 01:39:07 seconds ---

The training loss is  0.6132290084843873

Performance with the best model is :

The test loss is  0.6376016182157228

For exercise :  2

Mean absolute deviation  :  0.225947

RMS deviation::  0.132689

The hyperparameters are : model_dim is = 8 , num_heads = 4 , dim_feedforward = 8 , num_layers = 6 , dropout = 0.2 , stride = 50 , frame_size = 50 , dense_layer_neurons = 118 , epochs = 100, learning_rate = 1e-05