

The X_train size is torch.Size([455, 100, 75])

The y_train size is torch.Size([455, 1])

The X_test size is torch.Size([114, 100, 75])

The y_test size is torch.Size([114, 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([0.4638], 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: 0.7909 Val loss: 0.7180 Best model at epoch: 0

Epoch [2/100], Loss: 0.7370 Val loss: 0.7039 Best model at epoch: 0

Epoch [3/100], Loss: 0.7414 Val loss: 0.6803 Best model at epoch: 0

Epoch [4/100], Loss: 0.6898 Val loss: 0.6744 Best model at epoch: 0

Epoch [5/100], Loss: 0.7035 Val loss: 0.6909 Best model at epoch: 0

Epoch [6/100], Loss: 0.6803 Val loss: 0.6621 Best model at epoch: 0

Epoch [7/100], Loss: 0.6887 Val loss: 0.6613 Best model at epoch: 0

Epoch [8/100], Loss: 0.6750 Val loss: 0.6570 Best model at epoch: 0

Epoch [9/100], Loss: 0.6681 Val loss: 0.6584 Best model at epoch: 0

Epoch [10/100], Loss: 0.6679 Val loss: 0.6623 Best model at epoch: 0

Epoch [11/100], Loss: 0.6587 Val loss: 0.6555 Best model at epoch: 0

Epoch [12/100], Loss: 0.6578 Val loss: 0.6591 Best model at epoch: 0

Epoch [13/100], Loss: 0.6571 Val loss: 0.6582 Best model at epoch: 0

Epoch [14/100], Loss: 0.6480 Val loss: 0.6557 Best model at epoch: 0

Epoch [15/100], Loss: 0.6512 Val loss: 0.6522 Best model at epoch: 0

Epoch [16/100], Loss: 0.6535 Val loss: 0.6557 Best model at epoch: 0

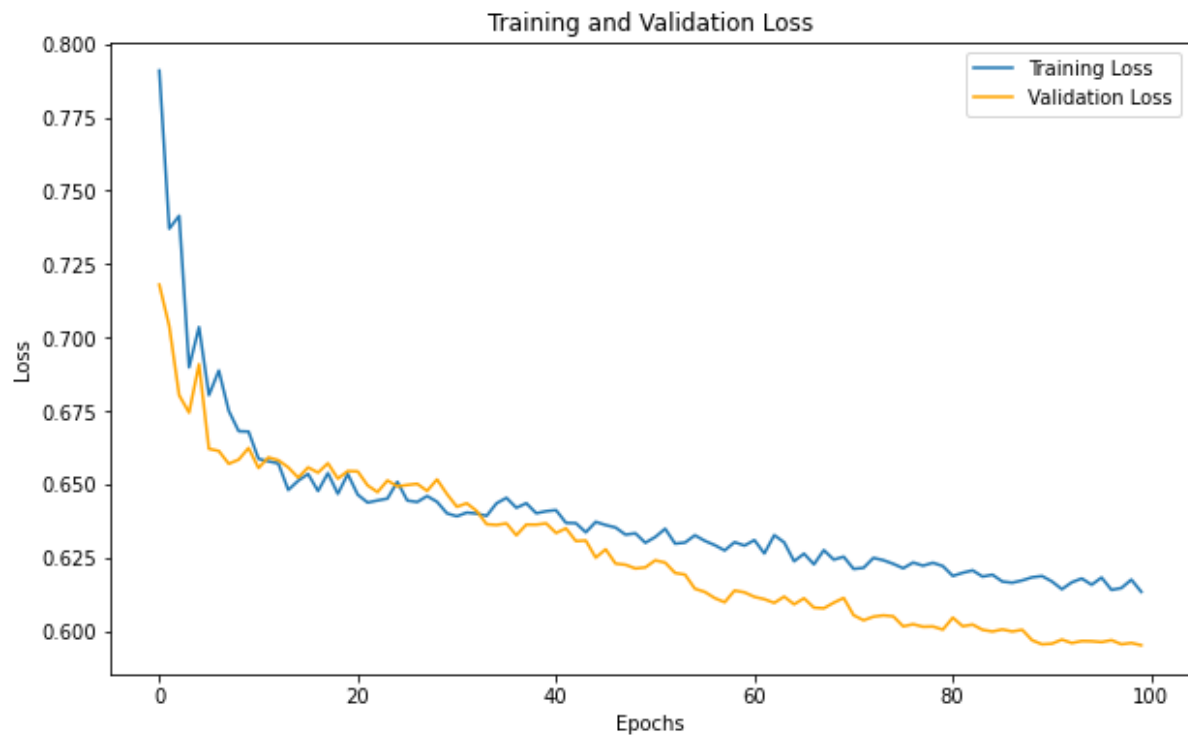
Epoch [17/100], Loss: 0.6477 Val loss: 0.6540 Best model at epoch: 17

Epoch [18/100], Loss: 0.6538 Val loss: 0.6571 Best model at epoch: 17

Epoch [19/100], Loss: 0.6467	Val loss: 0.6519	Best model at epoch: 19
Epoch [20/100], Loss: 0.6535	Val loss: 0.6545	Best model at epoch: 19
Epoch [21/100], Loss: 0.6465	Val loss: 0.6544	Best model at epoch: 19
Epoch [22/100], Loss: 0.6437	Val loss: 0.6496	Best model at epoch: 22
Epoch [23/100], Loss: 0.6445	Val loss: 0.6473	Best model at epoch: 23
Epoch [24/100], Loss: 0.6451	Val loss: 0.6513	Best model at epoch: 23
Epoch [25/100], Loss: 0.6508	Val loss: 0.6493	Best model at epoch: 23
Epoch [26/100], Loss: 0.6444	Val loss: 0.6497	Best model at epoch: 23
Epoch [27/100], Loss: 0.6439	Val loss: 0.6501	Best model at epoch: 23
Epoch [28/100], Loss: 0.6460	Val loss: 0.6477	Best model at epoch: 23
Epoch [29/100], Loss: 0.6440	Val loss: 0.6516	Best model at epoch: 23
Epoch [30/100], Loss: 0.6401	Val loss: 0.6466	Best model at epoch: 30
Epoch [31/100], Loss: 0.6391	Val loss: 0.6423	Best model at epoch: 31
Epoch [32/100], Loss: 0.6403	Val loss: 0.6435	Best model at epoch: 31
Epoch [33/100], Loss: 0.6400	Val loss: 0.6409	Best model at epoch: 33
Epoch [34/100], Loss: 0.6392	Val loss: 0.6364	Best model at epoch: 34
Epoch [35/100], Loss: 0.6435	Val loss: 0.6361	Best model at epoch: 35
Epoch [36/100], Loss: 0.6454	Val loss: 0.6367	Best model at epoch: 35
Epoch [37/100], Loss: 0.6420	Val loss: 0.6326	Best model at epoch: 37
Epoch [38/100], Loss: 0.6435	Val loss: 0.6362	Best model at epoch: 37
Epoch [39/100], Loss: 0.6401	Val loss: 0.6362	Best model at epoch: 37
Epoch [40/100], Loss: 0.6408	Val loss: 0.6367	Best model at epoch: 37
Epoch [41/100], Loss: 0.6412	Val loss: 0.6334	Best model at epoch: 37
Epoch [42/100], Loss: 0.6368	Val loss: 0.6350	Best model at epoch: 37
Epoch [43/100], Loss: 0.6367	Val loss: 0.6306	Best model at epoch: 43
Epoch [44/100], Loss: 0.6336	Val loss: 0.6308	Best model at epoch: 43
Epoch [45/100], Loss: 0.6372	Val loss: 0.6250	Best model at epoch: 45
Epoch [46/100], Loss: 0.6361	Val loss: 0.6278	Best model at epoch: 45
Epoch [47/100], Loss: 0.6352	Val loss: 0.6230	Best model at epoch: 47
Epoch [48/100], Loss: 0.6328	Val loss: 0.6226	Best model at epoch: 48
Epoch [49/100], Loss: 0.6333	Val loss: 0.6213	Best model at epoch: 49

Epoch [50/100], Loss: 0.6300	Val loss: 0.6217	Best model at epoch: 49
Epoch [51/100], Loss: 0.6320	Val loss: 0.6241	Best model at epoch: 49
Epoch [52/100], Loss: 0.6348	Val loss: 0.6233	Best model at epoch: 49
Epoch [53/100], Loss: 0.6298	Val loss: 0.6198	Best model at epoch: 53
Epoch [54/100], Loss: 0.6301	Val loss: 0.6192	Best model at epoch: 54
Epoch [55/100], Loss: 0.6326	Val loss: 0.6144	Best model at epoch: 55
Epoch [56/100], Loss: 0.6307	Val loss: 0.6133	Best model at epoch: 56
Epoch [57/100], Loss: 0.6292	Val loss: 0.6112	Best model at epoch: 57
Epoch [58/100], Loss: 0.6274	Val loss: 0.6098	Best model at epoch: 58
Epoch [59/100], Loss: 0.6303	Val loss: 0.6138	Best model at epoch: 58
Epoch [60/100], Loss: 0.6291	Val loss: 0.6132	Best model at epoch: 58
Epoch [61/100], Loss: 0.6309	Val loss: 0.6116	Best model at epoch: 58
Epoch [62/100], Loss: 0.6264	Val loss: 0.6108	Best model at epoch: 58
Epoch [63/100], Loss: 0.6326	Val loss: 0.6096	Best model at epoch: 63
Epoch [64/100], Loss: 0.6302	Val loss: 0.6117	Best model at epoch: 63
Epoch [65/100], Loss: 0.6238	Val loss: 0.6091	Best model at epoch: 65
Epoch [66/100], Loss: 0.6263	Val loss: 0.6111	Best model at epoch: 65
Epoch [67/100], Loss: 0.6227	Val loss: 0.6079	Best model at epoch: 67
Epoch [68/100], Loss: 0.6275	Val loss: 0.6077	Best model at epoch: 68
Epoch [69/100], Loss: 0.6243	Val loss: 0.6096	Best model at epoch: 68
Epoch [70/100], Loss: 0.6253	Val loss: 0.6113	Best model at epoch: 68
Epoch [71/100], Loss: 0.6211	Val loss: 0.6054	Best model at epoch: 71
Epoch [72/100], Loss: 0.6215	Val loss: 0.6036	Best model at epoch: 72
Epoch [73/100], Loss: 0.6249	Val loss: 0.6049	Best model at epoch: 72
Epoch [74/100], Loss: 0.6241	Val loss: 0.6053	Best model at epoch: 72
Epoch [75/100], Loss: 0.6229	Val loss: 0.6050	Best model at epoch: 72
Epoch [76/100], Loss: 0.6214	Val loss: 0.6016	Best model at epoch: 76
Epoch [77/100], Loss: 0.6233	Val loss: 0.6023	Best model at epoch: 76
Epoch [78/100], Loss: 0.6222	Val loss: 0.6014	Best model at epoch: 78
Epoch [79/100], Loss: 0.6232	Val loss: 0.6015	Best model at epoch: 78
Epoch [80/100], Loss: 0.6221	Val loss: 0.6005	Best model at epoch: 80

Epoch [81/100], Loss: 0.6187	Val loss: 0.6045	Best model at epoch: 80
Epoch [82/100], Loss: 0.6198	Val loss: 0.6016	Best model at epoch: 80
Epoch [83/100], Loss: 0.6206	Val loss: 0.6022	Best model at epoch: 80
Epoch [84/100], Loss: 0.6185	Val loss: 0.6004	Best model at epoch: 84
Epoch [85/100], Loss: 0.6192	Val loss: 0.5998	Best model at epoch: 85
Epoch [86/100], Loss: 0.6168	Val loss: 0.6005	Best model at epoch: 85
Epoch [87/100], Loss: 0.6165	Val loss: 0.5998	Best model at epoch: 85
Epoch [88/100], Loss: 0.6172	Val loss: 0.6004	Best model at epoch: 85
Epoch [89/100], Loss: 0.6183	Val loss: 0.5968	Best model at epoch: 89
Epoch [90/100], Loss: 0.6187	Val loss: 0.5955	Best model at epoch: 90
Epoch [91/100], Loss: 0.6169	Val loss: 0.5957	Best model at epoch: 90
Epoch [92/100], Loss: 0.6142	Val loss: 0.5971	Best model at epoch: 90
Epoch [93/100], Loss: 0.6166	Val loss: 0.5959	Best model at epoch: 90
Epoch [94/100], Loss: 0.6179	Val loss: 0.5966	Best model at epoch: 90
Epoch [95/100], Loss: 0.6157	Val loss: 0.5965	Best model at epoch: 90
Epoch [96/100], Loss: 0.6182	Val loss: 0.5962	Best model at epoch: 90
Epoch [97/100], Loss: 0.6140	Val loss: 0.5969	Best model at epoch: 90
Epoch [98/100], Loss: 0.6146	Val loss: 0.5955	Best model at epoch: 90
Epoch [99/100], Loss: 0.6175	Val loss: 0.5959	Best model at epoch: 90
Epoch [100/100], Loss: 0.6133	Val loss: 0.5951	Best model at epoch: 100



Total time in seconds : 6374.736449718475

The best model was found at epoch number 100

--- 01:46:14 seconds ---

The training loss is 0.6133389293710294

Performance with the best model is :

The test loss is 0.6169521881822955

For exercise : 4

Mean absolute deviation : 0.229890

RMS deviation:: 0.074725

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