

Current exercise is m03

The X\_train size is torch.Size([124, 240, 117])

The y\_train size is torch.Size([124])

The X\_test size is torch.Size([56, 240, 117])

The y\_test size is torch.Size([56])

The cuda availability is False

The cuda device is cpu

All frames shape is torch.Size([60, 117])

The frame size is torch.Size([60, 117])

The number of frames are 4 , the frame size is 60 and stride is 60

Current device: cpu

Model output is tensor([0.5168], grad\_fn=<SigmoidBackward0>)

The no. of frames are 4

The hyperparameters are : model\_dim is = 48 , num\_heads = 4 , dim\_feedforward = 48 , num\_layers = 6 , dropout = 0.1 , stride = 60 , frame\_size = 60 , dense\_layer\_neurons = 118 , epochs = 100, learning\_rate = 0.0001

Epoch [1/100], Loss: 0.360518 Val loss: 0.221353 Best model at epoch: 0

Epoch [2/100], Loss: 0.239379 Val loss: 0.219404 Best model at epoch: 0

Epoch [3/100], Loss: 0.223177 Val loss: 0.231074 Best model at epoch: 0

Epoch [4/100], Loss: 0.222353 Val loss: 0.229507 Best model at epoch: 0

Epoch [5/100], Loss: 0.217598 Val loss: 0.224593 Best model at epoch: 0

Epoch [6/100], Loss: 0.219952 Val loss: 0.223743 Best model at epoch: 0

Epoch [7/100], Loss: 0.216306 Val loss: 0.221259 Best model at epoch: 0

Epoch [8/100], Loss: 0.220555 Val loss: 0.221297 Best model at epoch: 0

Epoch [9/100], Loss: 0.217062 Val loss: 0.220939 Best model at epoch: 0

Epoch [10/100], Loss: 0.216382 Val loss: 0.225627 Best model at epoch: 0

Epoch [11/100], Loss: 0.217321 Val loss: 0.229857 Best model at epoch: 0

Epoch [12/100], Loss: 0.213237 Val loss: 0.226427 Best model at epoch: 0

Epoch [13/100], Loss: 0.211987 Val loss: 0.224098 Best model at epoch: 0

Epoch [14/100], Loss: 0.213605 Val loss: 0.230980 Best model at epoch: 0

Epoch [15/100], Loss: 0.217402 Val loss: 0.226515 Best model at epoch: 0

Epoch [16/100], Loss: 0.215523 Val loss: 0.221892 Best model at epoch: 0

Epoch [17/100], Loss: 0.216341	Val loss: 0.220353	Best model at epoch: 17
Epoch [18/100], Loss: 0.216354	Val loss: 0.224929	Best model at epoch: 17
Epoch [19/100], Loss: 0.212174	Val loss: 0.229627	Best model at epoch: 17
Epoch [20/100], Loss: 0.213624	Val loss: 0.221386	Best model at epoch: 17
Epoch [21/100], Loss: 0.213825	Val loss: 0.222964	Best model at epoch: 17
Epoch [22/100], Loss: 0.213474	Val loss: 0.221276	Best model at epoch: 17
Epoch [23/100], Loss: 0.217784	Val loss: 0.226415	Best model at epoch: 17
Epoch [24/100], Loss: 0.215866	Val loss: 0.221989	Best model at epoch: 17
Epoch [25/100], Loss: 0.214042	Val loss: 0.222600	Best model at epoch: 17
Epoch [26/100], Loss: 0.214494	Val loss: 0.222765	Best model at epoch: 17
Epoch [27/100], Loss: 0.216558	Val loss: 0.224350	Best model at epoch: 17
Epoch [28/100], Loss: 0.211142	Val loss: 0.225427	Best model at epoch: 17
Epoch [29/100], Loss: 0.213380	Val loss: 0.222099	Best model at epoch: 17
Epoch [30/100], Loss: 0.216538	Val loss: 0.223638	Best model at epoch: 17
Epoch [31/100], Loss: 0.211001	Val loss: 0.222769	Best model at epoch: 17
Epoch [32/100], Loss: 0.218113	Val loss: 0.222311	Best model at epoch: 17
Epoch [33/100], Loss: 0.214571	Val loss: 0.223848	Best model at epoch: 17
Epoch [34/100], Loss: 0.220036	Val loss: 0.221819	Best model at epoch: 17
Epoch [35/100], Loss: 0.212295	Val loss: 0.221413	Best model at epoch: 17
Epoch [36/100], Loss: 0.217407	Val loss: 0.226422	Best model at epoch: 17
Epoch [37/100], Loss: 0.210778	Val loss: 0.224977	Best model at epoch: 17
Epoch [38/100], Loss: 0.213903	Val loss: 0.221341	Best model at epoch: 17
Epoch [39/100], Loss: 0.211141	Val loss: 0.221597	Best model at epoch: 17
Epoch [40/100], Loss: 0.216048	Val loss: 0.222385	Best model at epoch: 17
Epoch [41/100], Loss: 0.213266	Val loss: 0.221450	Best model at epoch: 17
Epoch [42/100], Loss: 0.213690	Val loss: 0.222014	Best model at epoch: 17
Epoch [43/100], Loss: 0.213103	Val loss: 0.222032	Best model at epoch: 17
Epoch [44/100], Loss: 0.211743	Val loss: 0.223358	Best model at epoch: 17
Epoch [45/100], Loss: 0.212193	Val loss: 0.222152	Best model at epoch: 17
Epoch [46/100], Loss: 0.213969	Val loss: 0.222302	Best model at epoch: 17
Epoch [47/100], Loss: 0.216037	Val loss: 0.231745	Best model at epoch: 17

Epoch [48/100], Loss: 0.215101	Val loss: 0.222208	Best model at epoch: 17
Epoch [49/100], Loss: 0.214558	Val loss: 0.221998	Best model at epoch: 17
Epoch [50/100], Loss: 0.218113	Val loss: 0.221013	Best model at epoch: 17
Epoch [51/100], Loss: 0.214360	Val loss: 0.221207	Best model at epoch: 17
Epoch [52/100], Loss: 0.210732	Val loss: 0.220260	Best model at epoch: 52
Epoch [53/100], Loss: 0.210970	Val loss: 0.224571	Best model at epoch: 52
Epoch [54/100], Loss: 0.212812	Val loss: 0.221172	Best model at epoch: 52
Epoch [55/100], Loss: 0.211388	Val loss: 0.222386	Best model at epoch: 52
Epoch [56/100], Loss: 0.212611	Val loss: 0.221165	Best model at epoch: 52
Epoch [57/100], Loss: 0.212134	Val loss: 0.220926	Best model at epoch: 52
Epoch [58/100], Loss: 0.213454	Val loss: 0.221035	Best model at epoch: 52
Epoch [59/100], Loss: 0.214845	Val loss: 0.232271	Best model at epoch: 52
Epoch [60/100], Loss: 0.214371	Val loss: 0.221450	Best model at epoch: 52
Epoch [61/100], Loss: 0.213566	Val loss: 0.221345	Best model at epoch: 52
Epoch [62/100], Loss: 0.211918	Val loss: 0.222776	Best model at epoch: 52
Epoch [63/100], Loss: 0.211453	Val loss: 0.220920	Best model at epoch: 52
Epoch [64/100], Loss: 0.217247	Val loss: 0.221667	Best model at epoch: 52
Epoch [65/100], Loss: 0.212182	Val loss: 0.222404	Best model at epoch: 52
Epoch [66/100], Loss: 0.214913	Val loss: 0.221535	Best model at epoch: 52
Epoch [67/100], Loss: 0.210238	Val loss: 0.220789	Best model at epoch: 52
Epoch [68/100], Loss: 0.215213	Val loss: 0.221356	Best model at epoch: 52
Epoch [69/100], Loss: 0.215847	Val loss: 0.222499	Best model at epoch: 52
Epoch [70/100], Loss: 0.213365	Val loss: 0.222268	Best model at epoch: 52
Epoch [71/100], Loss: 0.210924	Val loss: 0.224716	Best model at epoch: 52
Epoch [72/100], Loss: 0.210446	Val loss: 0.223897	Best model at epoch: 52
Epoch [73/100], Loss: 0.213417	Val loss: 0.222255	Best model at epoch: 52
Epoch [74/100], Loss: 0.210216	Val loss: 0.222155	Best model at epoch: 52
Epoch [75/100], Loss: 0.213392	Val loss: 0.221648	Best model at epoch: 52
Epoch [76/100], Loss: 0.212171	Val loss: 0.222733	Best model at epoch: 52
Epoch [77/100], Loss: 0.212294	Val loss: 0.221534	Best model at epoch: 52
Epoch [78/100], Loss: 0.212064	Val loss: 0.221781	Best model at epoch: 52

Epoch [79/100], Loss: 0.212706	Val loss: 0.221502	Best model at epoch: 52
Epoch [80/100], Loss: 0.215158	Val loss: 0.221111	Best model at epoch: 52
Epoch [81/100], Loss: 0.213807	Val loss: 0.221927	Best model at epoch: 52
Epoch [82/100], Loss: 0.212222	Val loss: 0.221269	Best model at epoch: 52
Epoch [83/100], Loss: 0.215749	Val loss: 0.221847	Best model at epoch: 52
Epoch [84/100], Loss: 0.212499	Val loss: 0.223761	Best model at epoch: 52
Epoch [85/100], Loss: 0.212513	Val loss: 0.221688	Best model at epoch: 52
Epoch [86/100], Loss: 0.214099	Val loss: 0.221860	Best model at epoch: 52
Epoch [87/100], Loss: 0.212991	Val loss: 0.221001	Best model at epoch: 52
Epoch [88/100], Loss: 0.212953	Val loss: 0.223692	Best model at epoch: 52
Epoch [89/100], Loss: 0.214374	Val loss: 0.222841	Best model at epoch: 52
Epoch [90/100], Loss: 0.215045	Val loss: 0.221847	Best model at epoch: 52
Epoch [91/100], Loss: 0.212036	Val loss: 0.221565	Best model at epoch: 52
Epoch [92/100], Loss: 0.216820	Val loss: 0.223229	Best model at epoch: 52
Epoch [93/100], Loss: 0.212424	Val loss: 0.222414	Best model at epoch: 52
Epoch [94/100], Loss: 0.215197	Val loss: 0.222347	Best model at epoch: 52
Epoch [95/100], Loss: 0.212833	Val loss: 0.222981	Best model at epoch: 52
Epoch [96/100], Loss: 0.211625	Val loss: 0.222250	Best model at epoch: 52
Epoch [97/100], Loss: 0.210415	Val loss: 0.221427	Best model at epoch: 52
Epoch [98/100], Loss: 0.213298	Val loss: 0.222810	Best model at epoch: 52
Epoch [99/100], Loss: 0.209238	Val loss: 0.222089	Best model at epoch: 52
Epoch [100/100], Loss: 0.214112	Val loss: 0.221730	Best model at epoch: 52



Total time in seconds : 5184.263868093491

The best model was found at epoch number 52

--- 01:26:24 seconds ---

The training loss is 0.21411195034916336

Performance with the best model is :

The test loss is 0.20677782475416148

Mean absolute deviation : 0.007955

RMS deviation:: 0.011251

The hyperparameters are : model\_dim is = 48 , num\_heads = 4 , dim\_feedforward = 48 , num\_layers = 6 , dropout = 0.1 , stride = 60 , frame\_size = 60 , dense\_layer\_neurons = 118 , epochs = 100, learning\_rate = 0.0001