Phase 1

1- download F_PG1_Subject_id videos in MoVi Dataset

2- Using process_video.ipynb, Preprocess videos
- extract single motions into a fub_folder called same name as original video
- Build motion_mapping.json file to store all availale movements in all videos and assign motion_id

3- Using MMpose toolbox on HPC server, Extract 3d pose data from single motions data and build json files

4- Process 3d pose data
- Using process_video.ipynb, convert json files to csv
- Find common motions among all videos and merge those for each subject separately
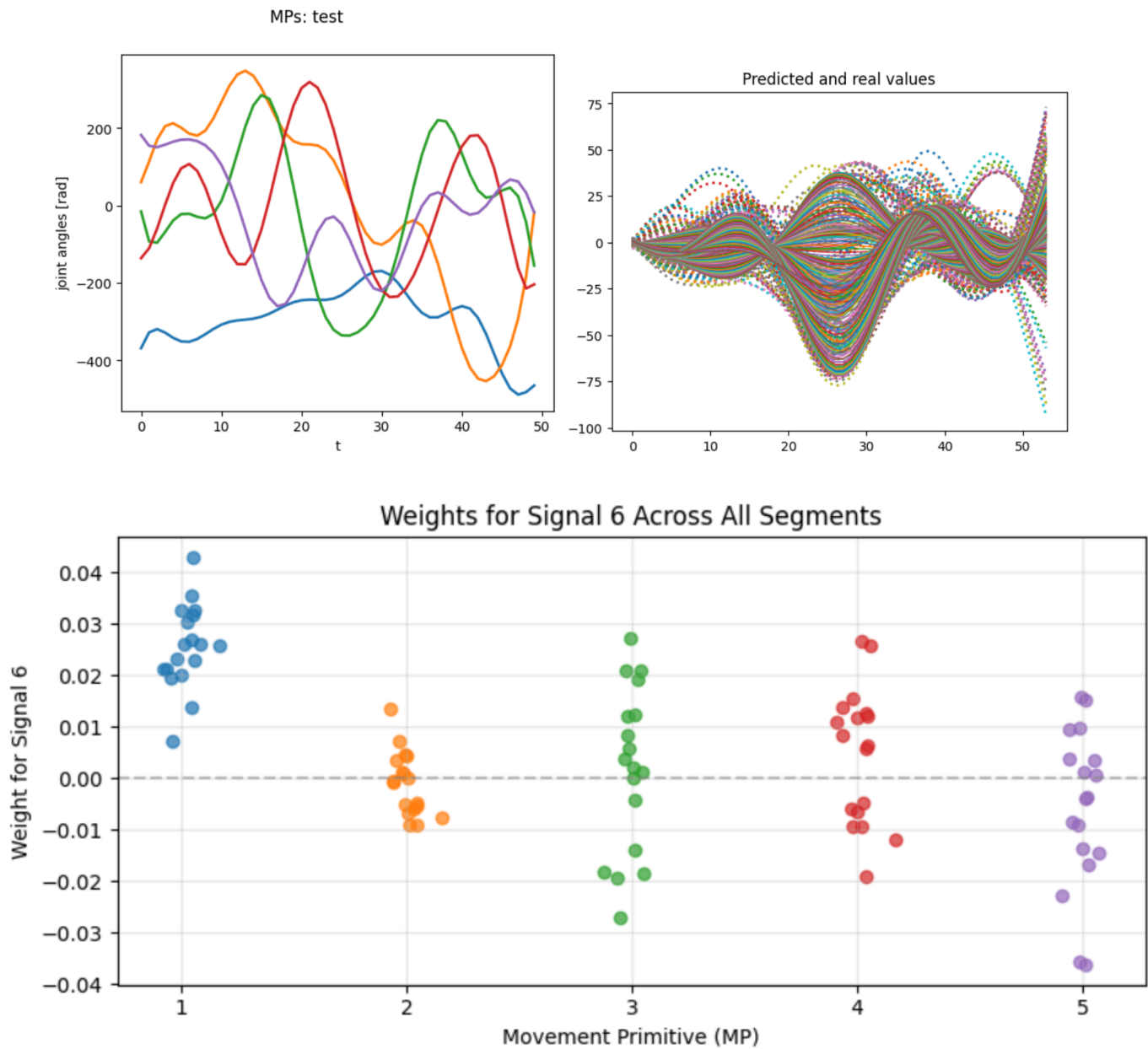- visualize sample frames in one example csv file

Frame 1
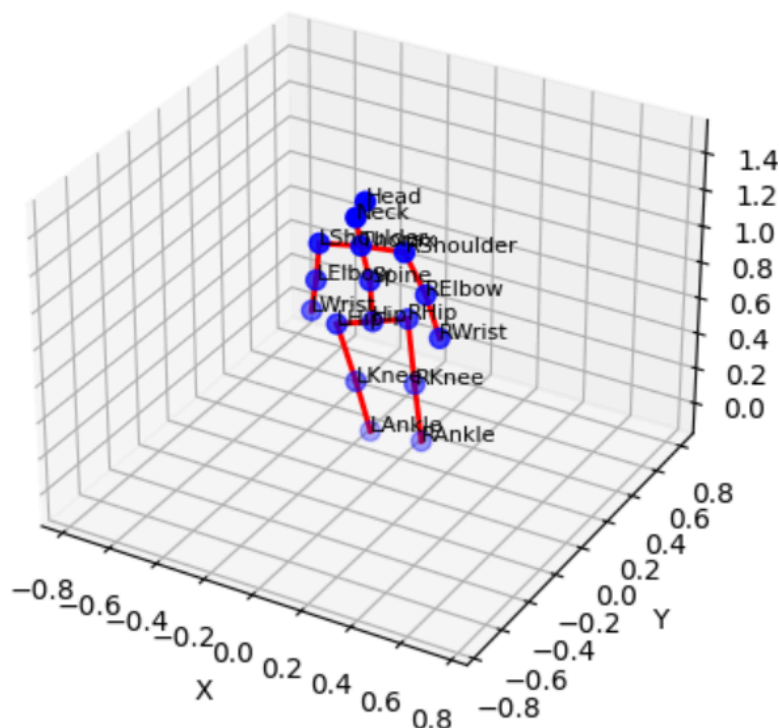
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- Calculate 3d rotations
- Convert each csv file to motion capture bvh. format data
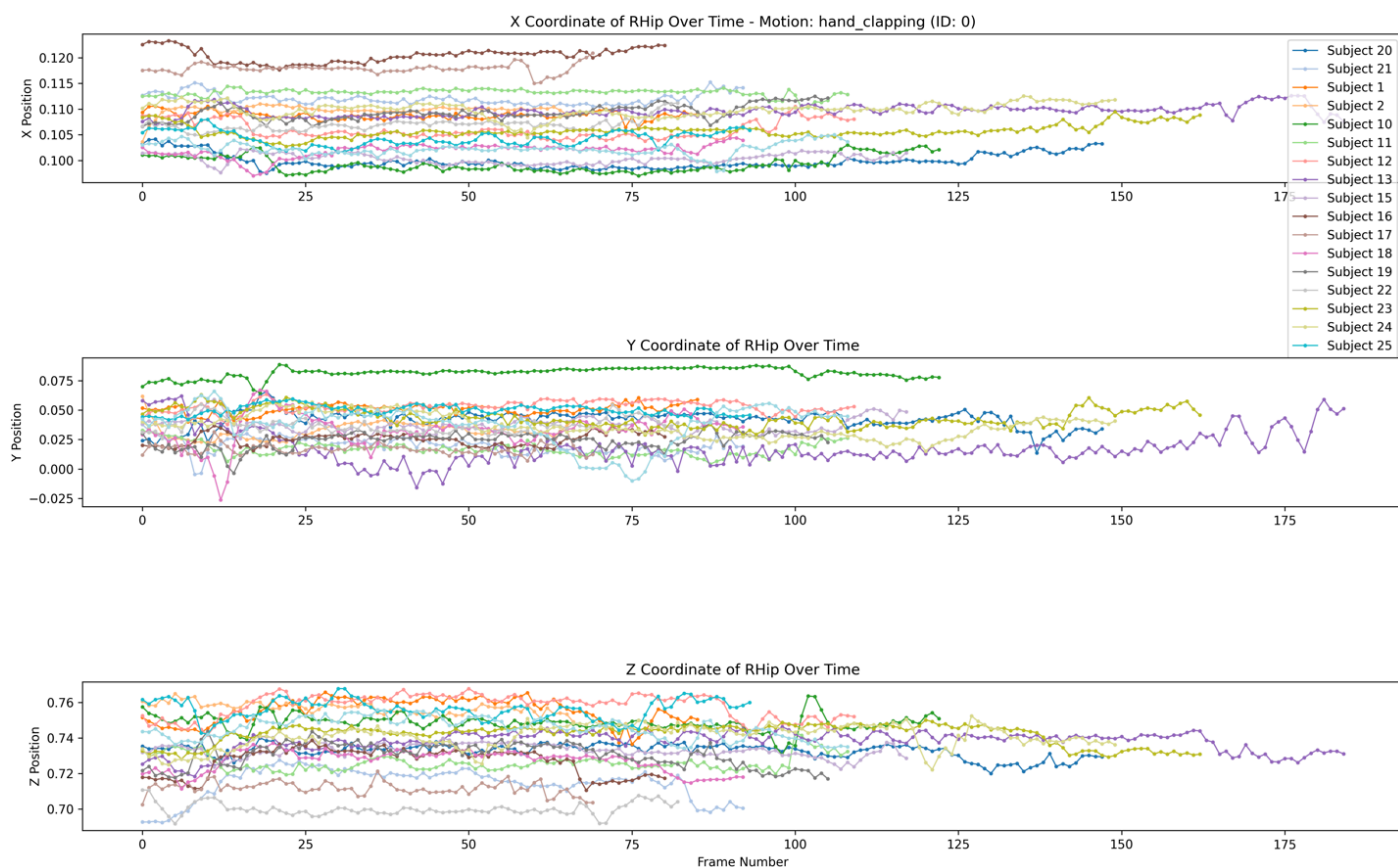
5- Feed data to TMP model

- Num_MPs = 5

- num_t_points= 50
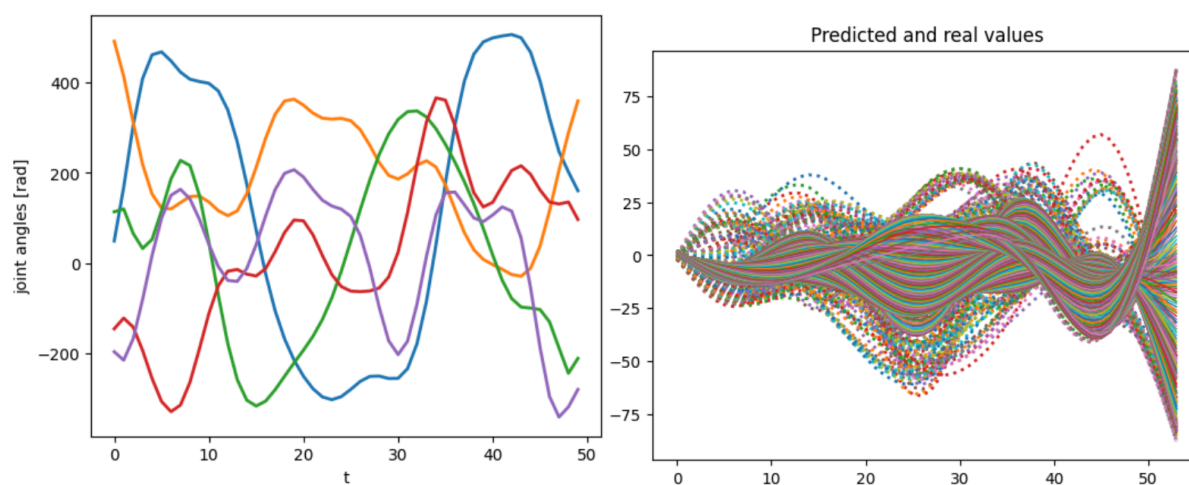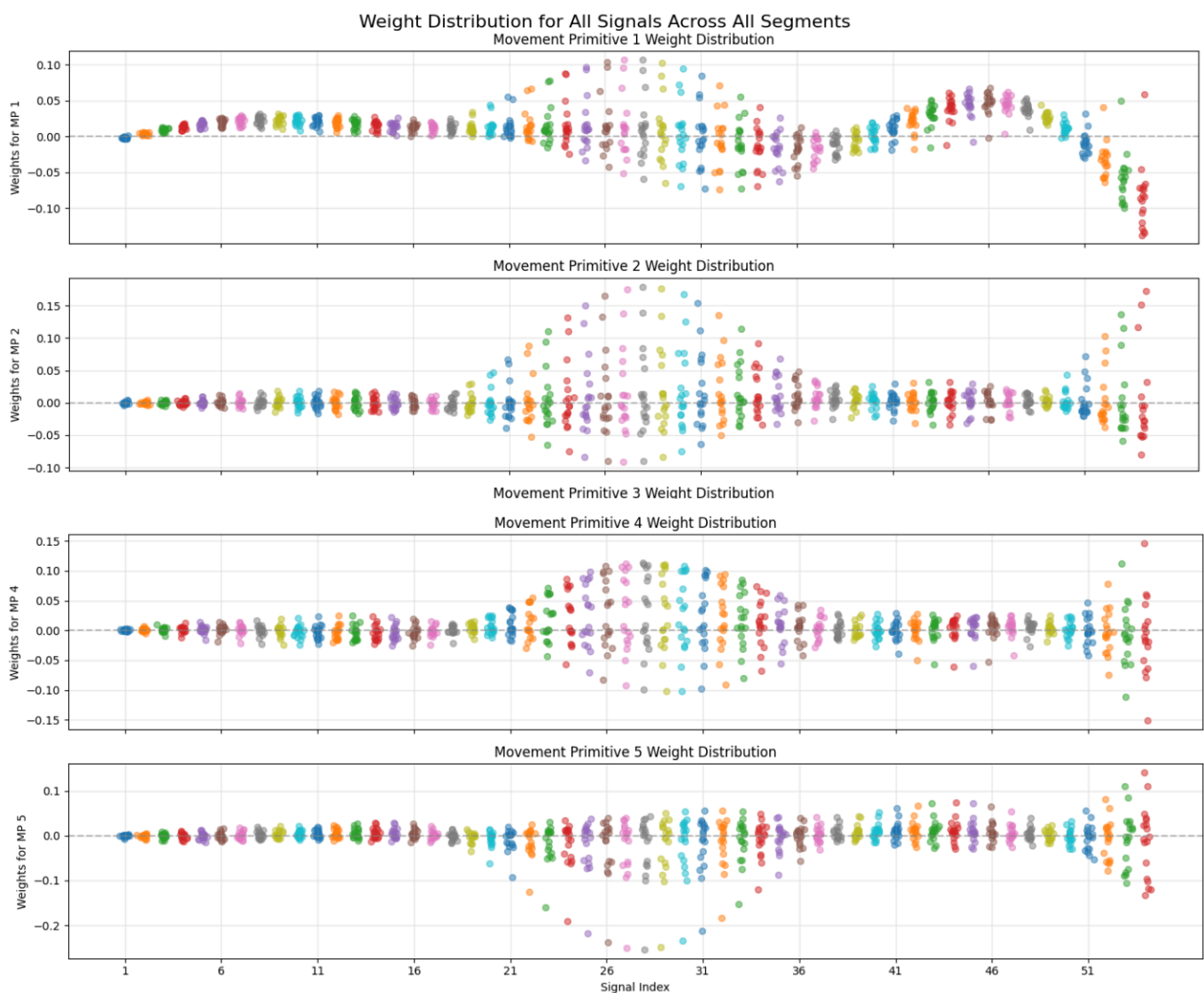- I got 42 % VAF which is unacceptable and very awful result

MPs: test
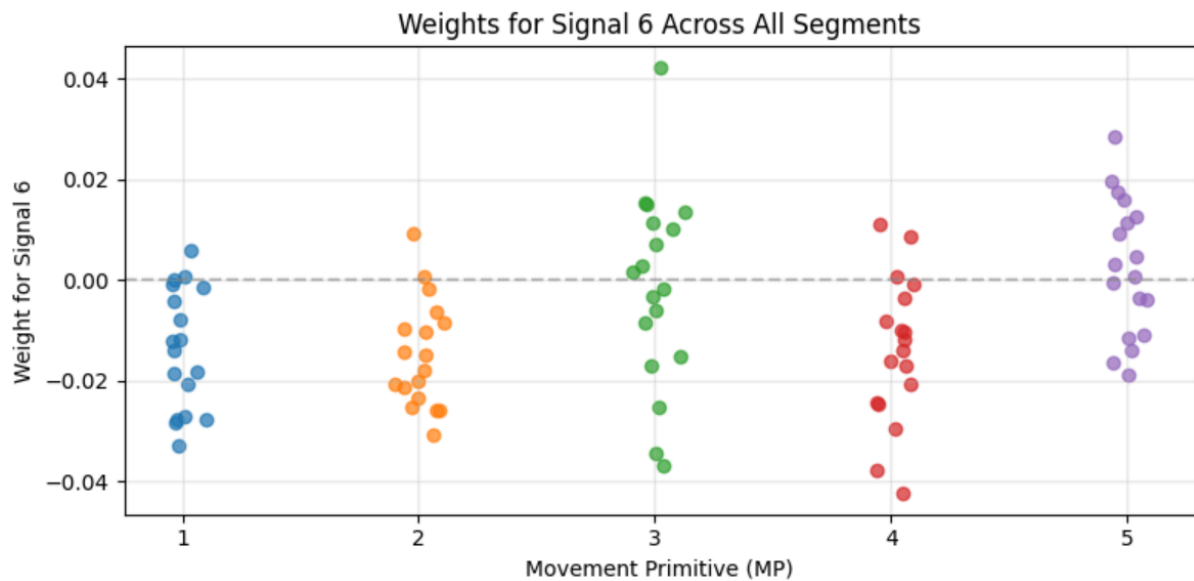

Predicted and real values

Weights for Signal 6 Across All Segments

Phase 2

Now, I want to visualize trajectories for each motion and see how i can set boundaries to promote model performance

X Coordinate of RHip Over Time - Motion: hand_clapping (ID: 0)

Y Coordinate of RHip Over Time

Z Coordinate of RHip Over Time

As seen above, every specific motion is taking variable time duration for different subjects so now I'll like to feed one specific motion of all subjects to TMP model and see how it works

- Walking motion only for training the model
- Num_MPs = 5
- num_t_points= 50
- I got 48 % VAF

Predicted and real values

Weights for Signal 6 Across All Segments

Weight Distribution for All Signals Across All Segments

Now we know MPs are time variable but the the weights of each signal (joint) is constant for the whole range of movement(time)

1- i want to see if i can keep the MPs but extract the weights of signals for each specific movement cause right now we have a sequence of all different movement. but lets see the

weight distribution for each movement sequence and compare them together. BUT, i should know how i can keep the MPs (maybe train of one specific movement that has all variety of movement and then make sure the performance is good enough then test this model on all other movement and see the weights)

2- Also, a problem that we have right now is that hen all movement are sticking together and each movemnt is taking specific time for each suject you can not relate specific duration to one movemnt becasue this sequence is taking different time for each suject however, when you condier one specific movement even if all sequences do not have exact time length the variablity of of signals is still related to that movement and has less conflict i believe

ANOTHER note: it seems that signal index from 1 to 15 (mostly related to face) are very simillar and correlated and do not have much information so we can ignore that part of joints?