Steps to do area analysis with DLC (with comments in green) (and notes in purple) :

1. Look at all slides of restore grant to get idea
2. Get ICE 8 videos ready for DLC software using trimming method and also editing out the zoomed in parts (only one left for Ishani – Video 4) (Dr.J might’ve told to expand to more videos present in PennBox)
3. Watch video on how to use DLC (Raima must send the one Nidhi has put out)
4. Label a few markers with DLC
5. Run it through the DLC code and generate CSV files
6. (optional) might also want to save the video with markers
7. Run CSV file trough numerical analysis code (might want to make the code better as mine is basic)
8. Get the area curve over all frames (number of frames vary from video to video)
9. Now with the area data try to smoothen it. (I have a few options : go to scipy.signal documentation and there you will find a number of filters – low pass, high pass, notch, kaiser filter. I would say median filtering is a good place to start, but this will take the most time in playing around and generalizing for all of the videos)
10. Repeat step 4 to 9 for all videos
11. If the area curve increases: patient and therapist are drawn apart. If the area curve decreases: it will imply the complicated paradigm of interaction is achieved.
12. This is a simple classifier, might want to build on this.
    1. Find better methods to calc area over each frame. I used a simple shoelace method to calculate area of polygons.
    2. Or collect sufficient area data in the same manner, pass through a good neural network architecture and predict the 3 paradigms.

For now : 7 ICE videos are done by Raima (before smoothening)

To do for Ishani :

1. Run the full process for 1 more ICE video that Raima didn’t do.
2. Do the smoothing part for all 8 videos (pretty time consuming – good luck!)
3. See if any significant conclusion can be drawn from these 8 videos?
4. Further expand this pipeline for more videos on PennBox if conclusion is nice. If not, then go back and follow step 12 above.