Notes from 02-24-2020

Linear combination:

If we look at it does it look real?

Seems like we have a good choice here

MultiDTW:

Do we think the alignment is a good choice? (Of the left hand)

Consider to have four different versions and choose the “best” alignment

Center of Mass approach:

We don’t necessarily need to use their approach

Do we really want to align the left and right hand as the “same”? How would this mirroring affect our results?

Consider a vector representing multiple 3D features

Consider whether it makes sense to align a sequence of 400 frames to a sequence of 13k frames

**Keep in mind: How to align a new sequence of unknown action?**

Temporal Alignment

Consider how others do it and decide why or why not we do this?

Maybe do an example with a SIN function and have one skewed and one stretched. Can we still refer this back to the original function?

* No objective quality measure (yet) **Nice to have**
  + After Alignment
  + Distance of aligned seq
    - Attention to scaling
  + Correlation coefficient
  + Subjective (alternative or additional)
  + Cost used in DTW
* Possible 1D features for traditional DTW (Fastest)
  + Krüger: Y-coordinate of COM vector
    - 🡪 Problem:
    - Need body weight
    - Might not be unique
  + **One coordinate of foot or hand (point)**
    - Additional point: Use angle between upper & lower arm or leg
    - 🡪 “Problem”:
    - Best choice differs among actions
    - Question: **Which 1D feature represents which action best?**
      * Subjective evaluation
      * Before alignment
      * 2) Which is able to distinguish the different actions?
* M-D features?
  + A) Use dimensionality reduction => 1D feature
  + B) Adapt distance/similarity measure in DTW
    - (Krüger)

Spatial Alignment

Put in the report on why we chose to do the Procrustes analysis

We want to focus on the movement of the sequence

Not differentiate between the different test subjects