Baseline Method: Dynamic Time Warping

- Natural metric for comparing sequences
- Useful in retrieval, classification, and alignment
- $O(NM)$-complex using dynamic programming
- Various “pruning methods” exist which approach linear time...
- However, most are not universally applicable
- Data dimensionality can cause expensive “local distance” calculations
- Quadratic penalty when the data is sampled too finely
- Inappropriate when sequences come from different modalities
- Relies on a non-learned metric for comparing feature vectors

References


Hash Feature Vectors and Implicitly Downsample Sequences for Faster DTW [1]

Map Entire Feature Vector Sequences to an Embedded Fixed-Size Euclidean Space [2, 3]