Isolated vowel and digit recognition using Dynamic Time Warping report

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Dynamic time warping is the non-linear alignment between speech features of reference and test signal. It is a dynamic programming technique that finds the shortest alignment path between two signals considered. Here in Matlab we demonstrate its ability as a pattern matching process.

Here comparisons of the alignment plot between two different pairs of vowels are shown and the corresponding distance measures. It can be seen that the Euclidean distance for similar vowels is lower than that of dissimilar vowel.

Experiment:

- Two instances for each of the vowels have been taken for testing.
- Sampling rate – 16khz
- MFCC – 39 dimension
- The recordings are found in the same folder of dtw

Vowels	Alignment distance
‘a’ vs ‘a’	270.667
‘a’ vs ‘e’	306.1826