

# Performance Evaluation of Dynamic Time Warping

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## Methodology:

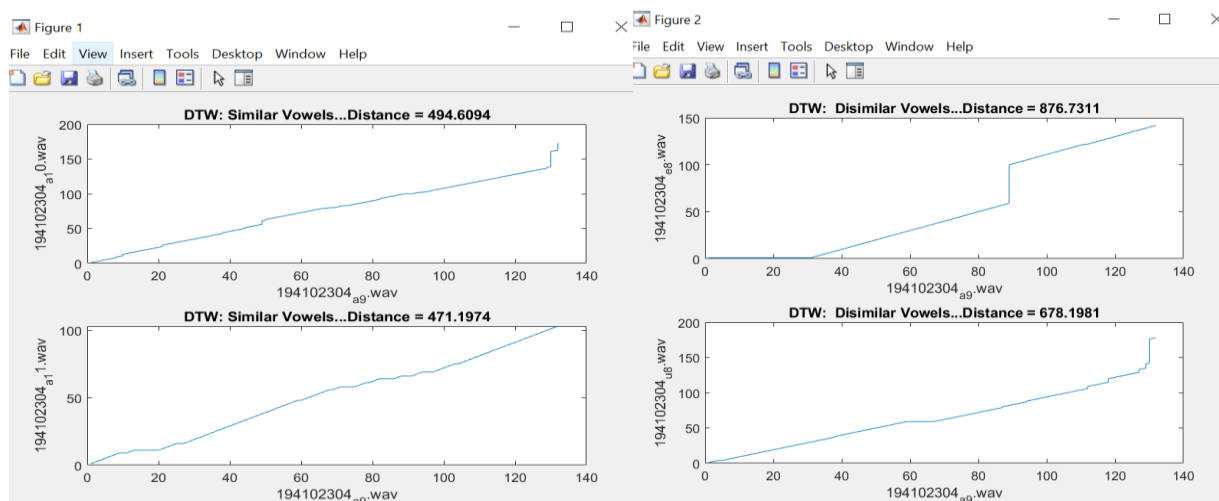
Twenty five utterances each for the vowels (a,e,i,o,u) and the numbers (from 0-9) and a sentence are recorded and saved as .wav file. Mfcc features of these recordings are computed and saved in a corresponding 2 dimensional matrix where in, each data(feature vector) comprises of stacked up Mfcc,delta and double delta coefficients. DTW scores for each vowel against recordings of same vowel and that with different vowels are computed and corresponding plots are recorded.

## Functions Used (In matlab):

- mfcc
- delta
- deltaxdelta
- dtw

## Observations:

The following plots for distances of vowels against similar and dissimilar vowels were obtained. DTW scores of A9(9<sup>th</sup> utterance of vowel A) are computed against A10 and A11(figure1) DTW scores of A9(9<sup>th</sup> utterance of vowel A) are computed against E8 and U8(figure2)



## **Conclusion:**

- The DTW scores for similar vowels are appreciably lesser compared to dissimilar ones
- Slight irregularities in distances are also noted, inferring that DTW is not a strong means of classifying vowels.