Dysarthric speech classification system

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ABSTRACT:

The proposed idea is to build a dysarthric speech classification system using the glottal and acoustic features from a sample of coded telephonic speech.
The glottal features to be extracted are of 2 categories

1) Time frequency domain parameters
2) Parameters based on the Principal Component Analysis.

The glottal features can be extracted from the input efficiently using the deep neural net based glottal inverse filtering technique.
The acoustic features of the input can be extracted from the input using openSMILE toolkit.
Using the glottal and acoustic parameters, we can train a Support Vector Machine to classify the speech input.
The speech samples are to be taken from the TORGO and Universal Access Speech Database.

The result shows that glottal features when used along with acoustic features to train the Support Vector Machine, the accuracy was improved. The proposed dysarthric speech classification method can potentially be employed in identifying the dysarthria from coded telephone speech.

REFERENCES:

[1] https://doi.org/10.1016/j.specom.2019.04.003

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