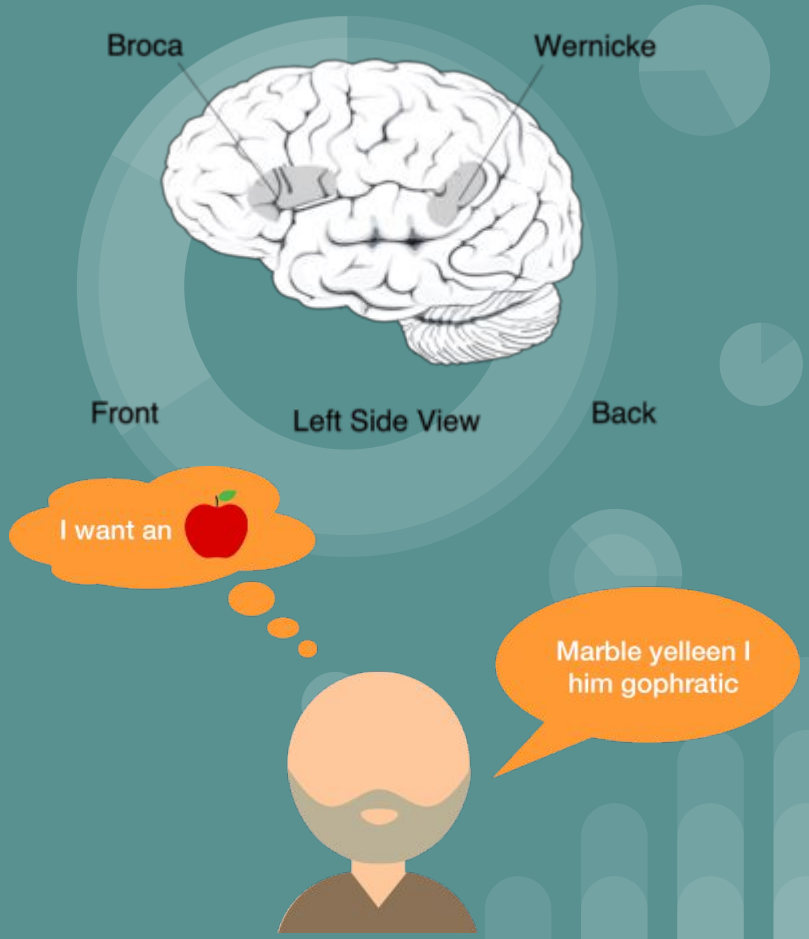
# Data Science project: Aphasia

KB-74

# Aphasia speech to text

Goal of the project: Create a speech to text software that can successful translate speech from aphasia patients to text.

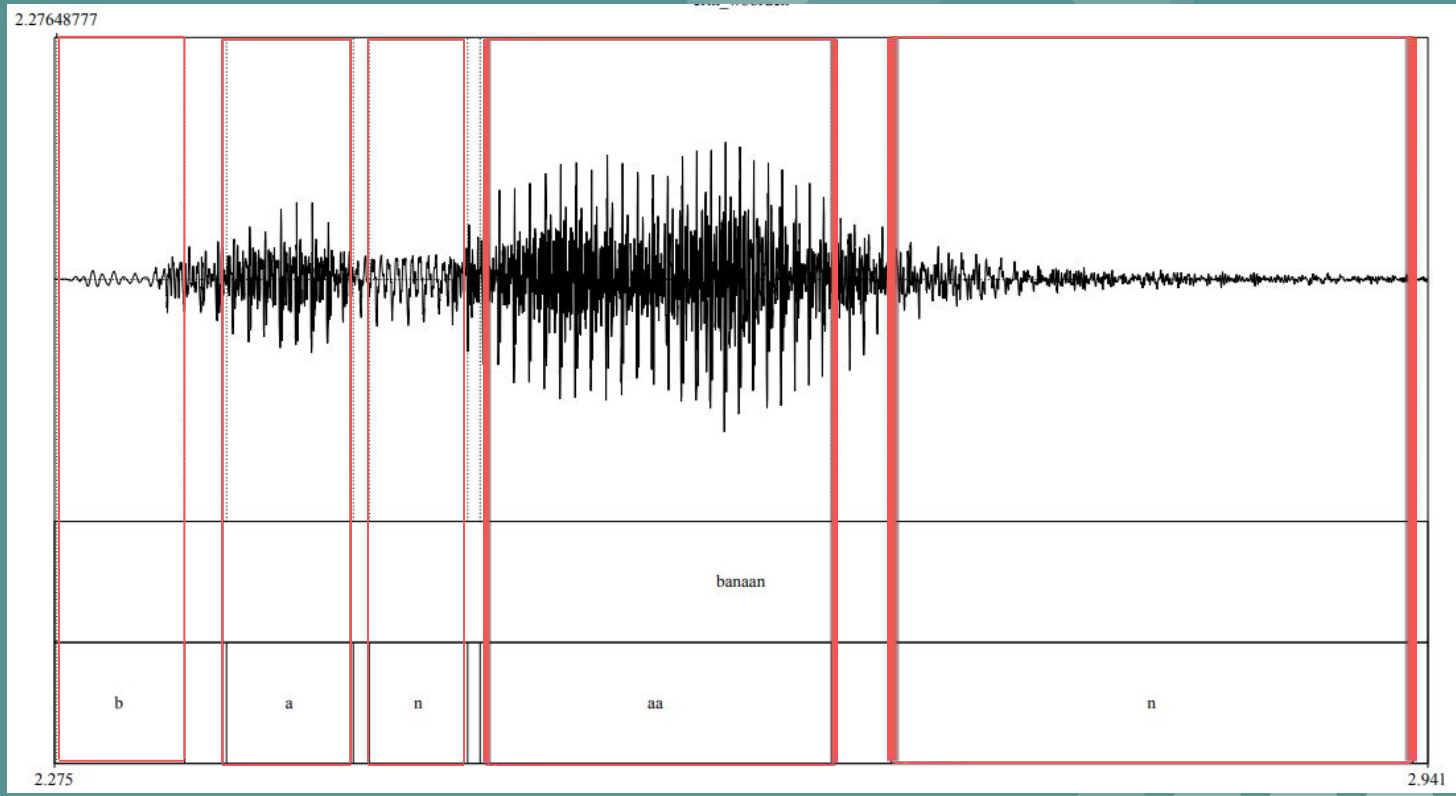


# Phoneme classifier

Accuracy : 61 %

Multi Layer Perceptron

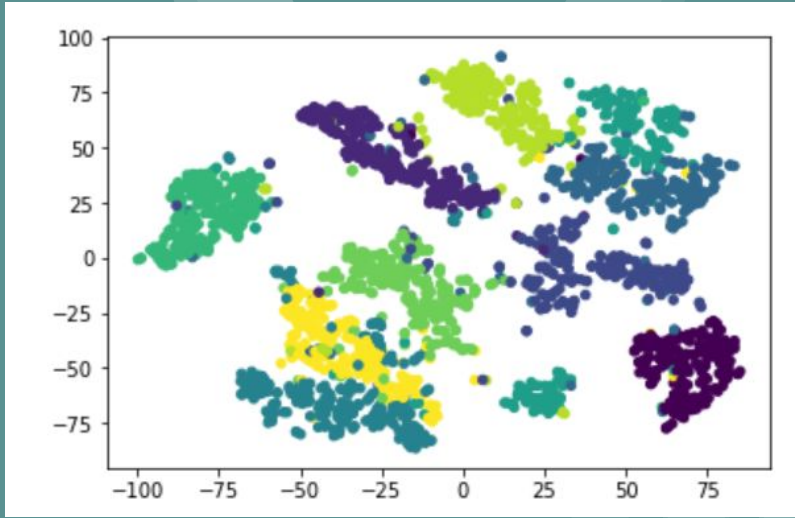
3 layers deep



# TSNE - Classifier experiments

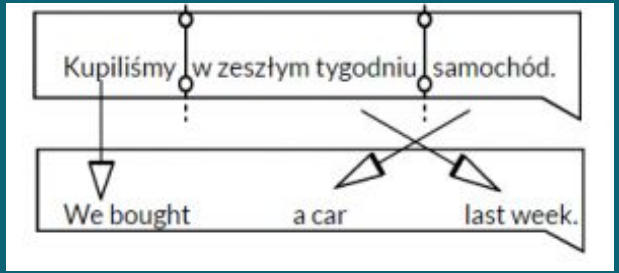
Using TSNE to cluster sounds to classify phonemes.

- labels from word boundaries
- nearest neighbor



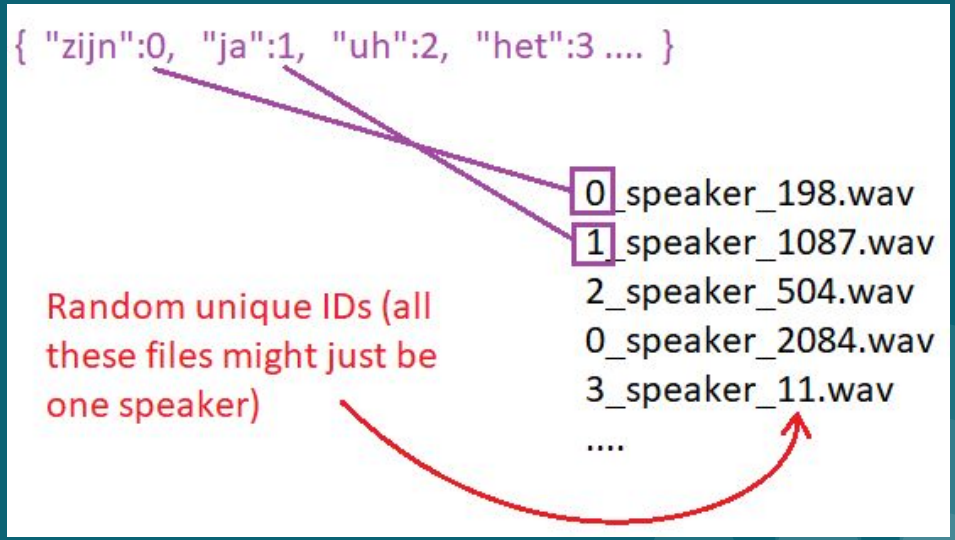
# Sequence to sequence

- Translation from one domain to another
- First test with dutch words
- We used Pannous tensorflow-speech-recognition library



# Sequence to sequence

- Previously created CSVs
- Frequent Dutch words



# Sequence to sequence

- Started with small data set (~1300 wav files)

```
Training Step: 2825  | total loss: 0.29143 | time: 2.564s
| Adam | epoch: 025 | loss: 0.29143 - acc: 0.9439 | val_loss: 0.01197 - val_acc: 0.9975 -- iter: 7200/7200
--
```


- Then went onto medium set (~14000 wav files)

```
Training Step: 25000  | total loss: 0.23938 | time: 1.535s
| Adam | epoch: 250 | loss: 0.23938 - acc: 0.9186 | val_loss: 10.23928 - val_acc: 0.1544 -- iter: 6400/6400
--
```


- Then the whole set (~47000 wav files)

This gave around the same results as with the medium set

# Questions?