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Part: 2

Feature Extraction

For the first assigment run: “plotVoice.m”

For the second assigment run: “plotSpectrograms.m”

For the third assigment run: “CompareFemaleAndMale.m”

For the forth assigment run: “plotCorrelation.m”

Which representation do you think is the easiest for you , as a human to interpret, and why ?
The spectrogram is much easier for us humans to understand since we can look past the “noise” and also its quite easy for us to see the peaks in the frequencies. The ceptogram looks much like gibberish to us, because there is no obvious pattern that we can recognise.

Can you see that they represent the same phrase?
yes, for the two spectrograms we can distinguish that the female and male diagrams represent the same phrase. This is due to that we can see a rough outline of the frequencies has a similar pattern.

Can a computer discover this?
We think that its easier for a human to discover the similarities because we base this on a feeling rather than a mathematical truth. Thus we think that the computer would need a different view, much like the ceptogram to discover the differences.

Can you see that the they(the ceptograms) represent the same phrase? what about a computer?
No, now they look very different for us and there are no obvious patterns that we could recognise. But since the data seems divided into squares its probably easier for a computer to find the pattern that is hidden in both of them.

Which matrix looks the most diagonal to you?
We think that the ceptogram has the most obvious diagonal, we base this on the fact that the plot had larger contrast (the background being much darker). So this makes the diagonal much easier to see

Is it possible to cheat a MFCC plot?
MFCC removes noise from the data it has and also it discards the pitch. Pitch is something that can give one word two different meanings. One example is the word “rosen” which can mean rose (flower) or surname(rosén) (with a prolonged E). An other example is the word “filen” which can mean sour-cream or the fillet (fileen). With otherwords it seems possible to beat the MFCCtest by changing pitch.