Meeting 3 with Prof Rubin – Bianca and Lindzi

25 September 2017, 11:30

- Prof Rubin will send us the prelim reports and the assessment sheets
- Peter and Joyce want to meet tomorrow from after 10
- Struggling with synthesising voice
    - We've looked at the synthesis first before mapping features from robot to human
    - So extracted MFCCs and then re-synthesised voice from the MFCCs -> bad results
    - So looked to maybe doing LPC rather and then doing LPC synthesis -> results also bad
        - But we think that we might be able to get better results using LPC
        - More info available in the literature on LPC
            - Voice morphing where they used LPC and also the glottal pulse etc.
    - MFCCs are better for speech recognition, they characterise the individuality of the voice better, but because it extracts such specific info it's hard to recreate the voice.
        - With LPC there is more information available online.
        - We have been looking at extracting MFCCs, we want to then map between the human and robot MFCCs but when reconstructing the voice sounds very bad.
    - Played the recording of the MFCC re-synthesis.
    - MFCC loses the harmonics and characteristics
    - Document the problem in the report so that you have a set of techniques you apply and you understand why they don't work. That then becomes part of the results section in the report (rather than throwing it away).
    - Can then have a table of results of different algorithms you have tried.
        - This is NB because you could do a lot of work and none of it works but then only report on the final thing that works and it looks like you didn't do a lot.
        - You could do a spectral plot on all techniques and show how they differ.
        - That becomes your project then, demonstrating which technique is the optimal one to use.
        - There's no way to predict what works, it's an investigation/experimental process. You can get an idea that something might work but at the end of the day you don't know until you implement it.
    - Ultimately, you'll have one that work the best even if it's still not the quality you want.
        - There's no guarantee that you'll get great results in this time, so rather document your failures.
- Once you have a bunch of techniques you can compare by an audio review but also do FFT and spectral analysis.
    - Doesn't matter what you do, if it doesn't give you the output you want rather do a table and compare.
    - This project could easily be a PhD project so you have to scale it down for 4th year project.
- Start off by comparing the data and then only after that go into re-synthesising the voice. So go through it methodically first.

Peter and Joyce to meet tomorrow at 11 and if there's a problem Prof Rubin will let them know in good time if there is an issue.