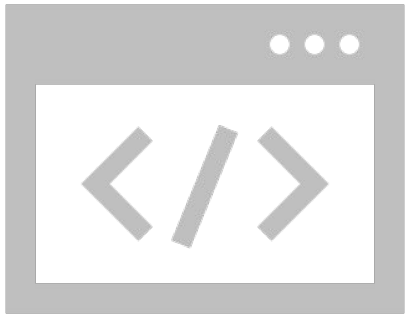
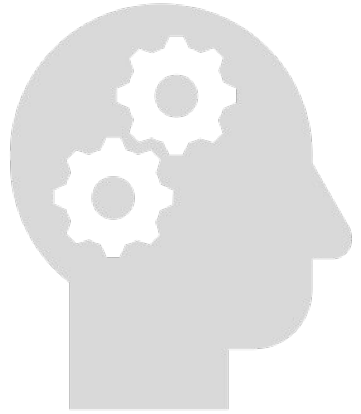
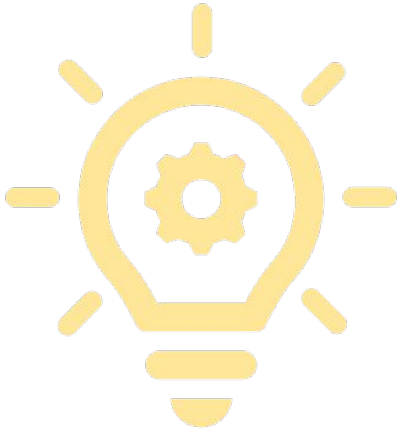




Biomedical Signal Processing



10/24 Homework 2

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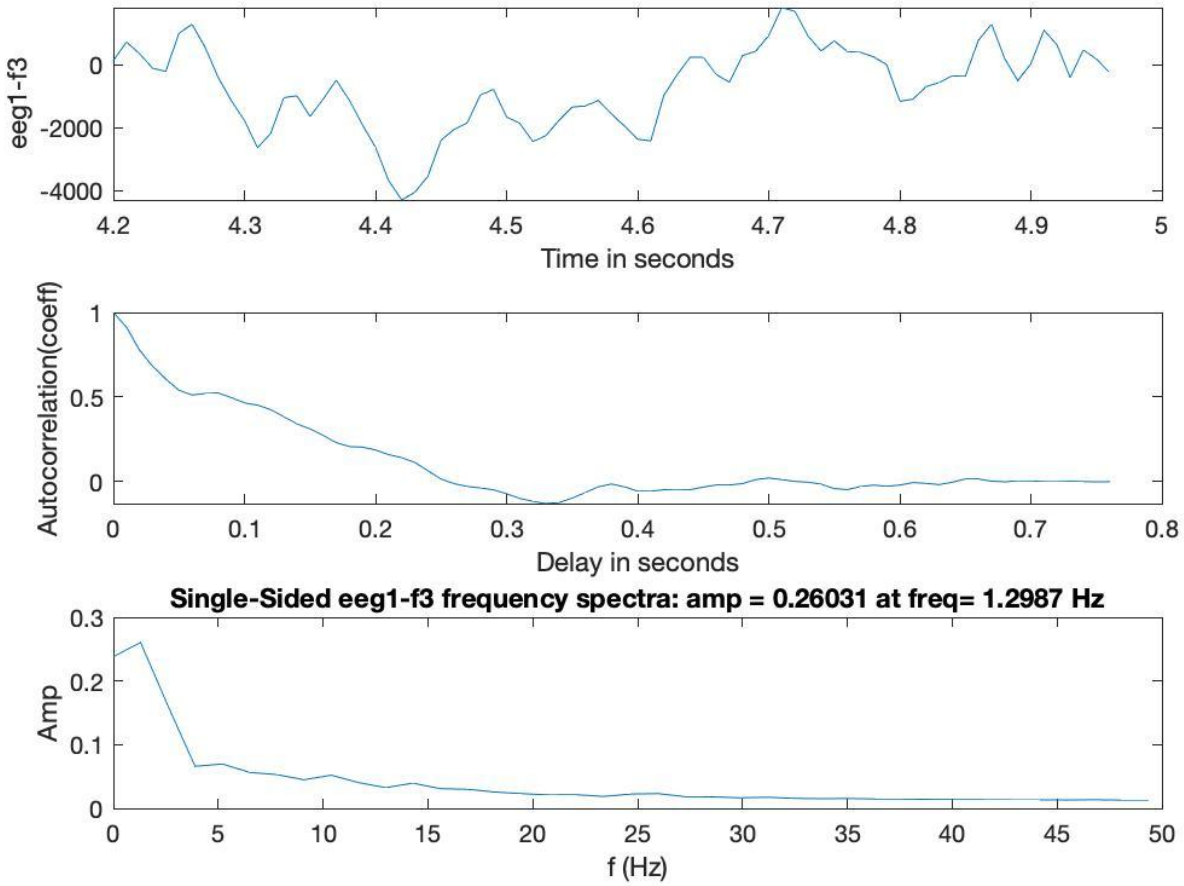
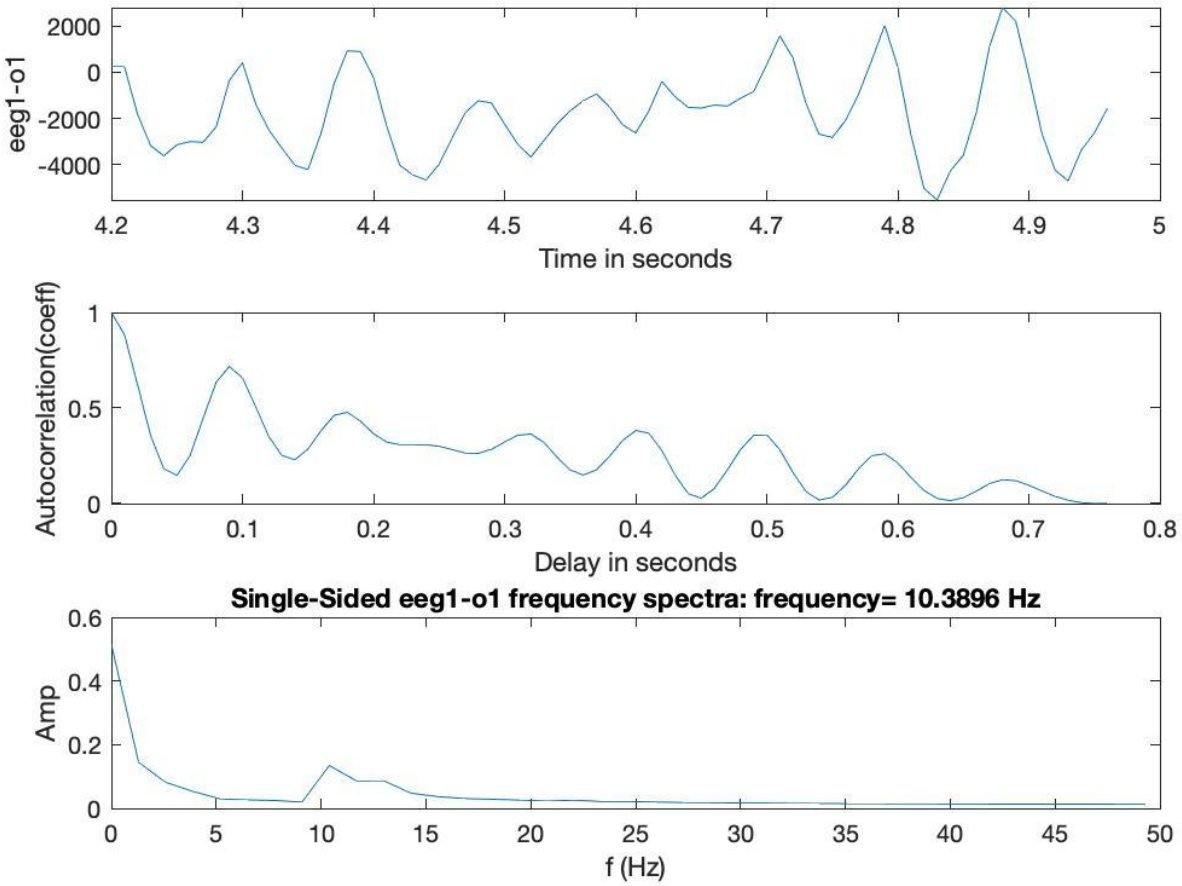
Problem 1

- ACF of the 4.2-4.96 s segments of f3
- Randomly attenuation
- Fft peak at f = 1.2987 Hz
- Period of ACF coeff ÷ 0.77s (But can’t observe in pic2)



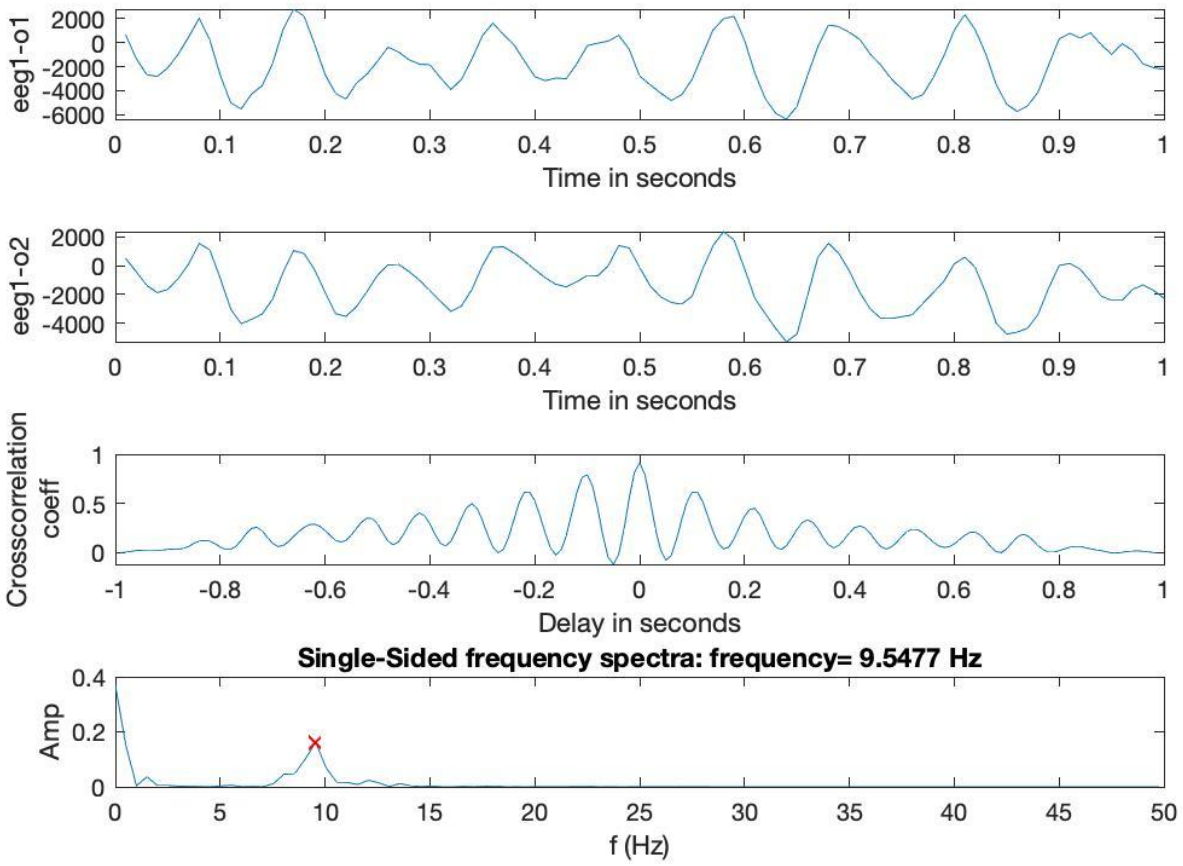
Problem 1

- ACF of the 4.2-4.96 s segments of o1
- Periodic attenuation
- Fft peak at f = 10.3896 Hz
- Period of ACF coeff÷ 0.096s (Clearly observed in pic2)



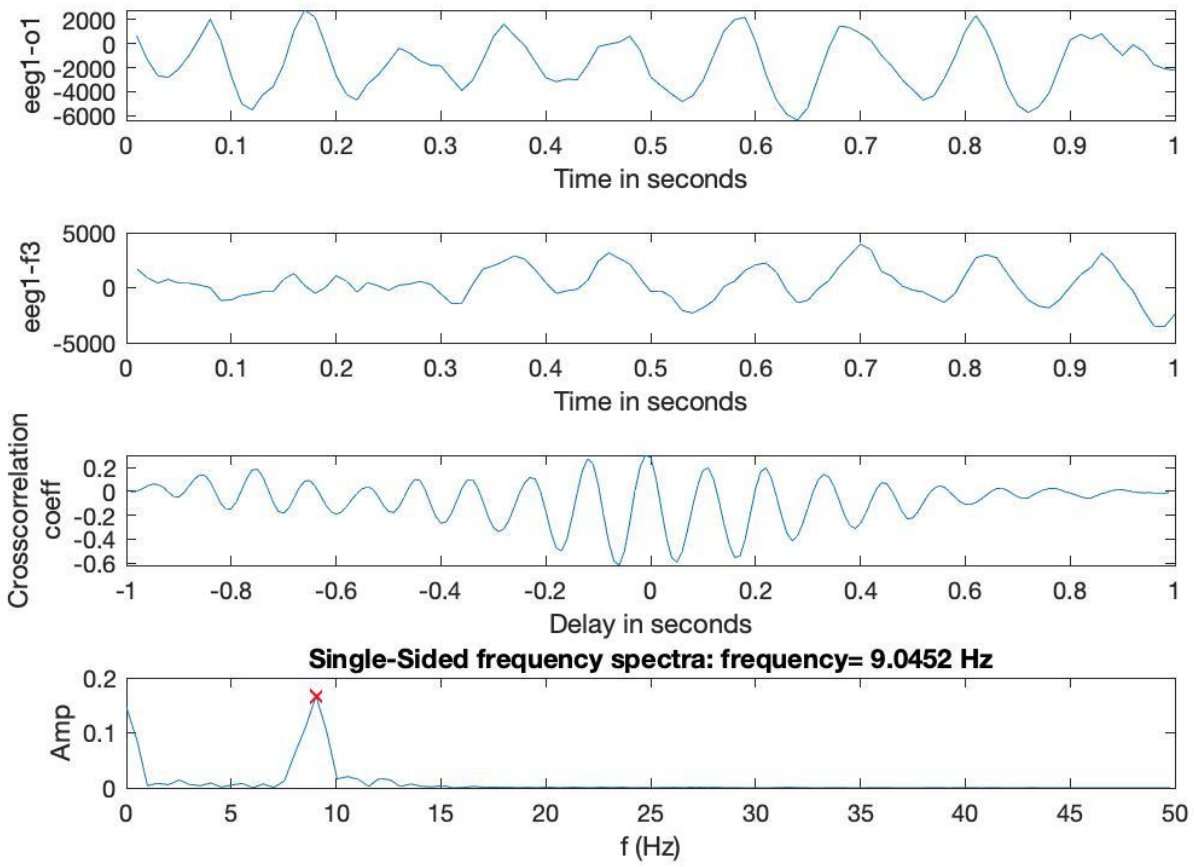
Problem 1

- Cross-correlation of o1 and o2 during 4.72~5.71 secs
- Fft peak at f = 9.5477 Hz
- Period of correlation coeff≒ 0.1047s, which means signal o2 delay 0.1047s compare to o1



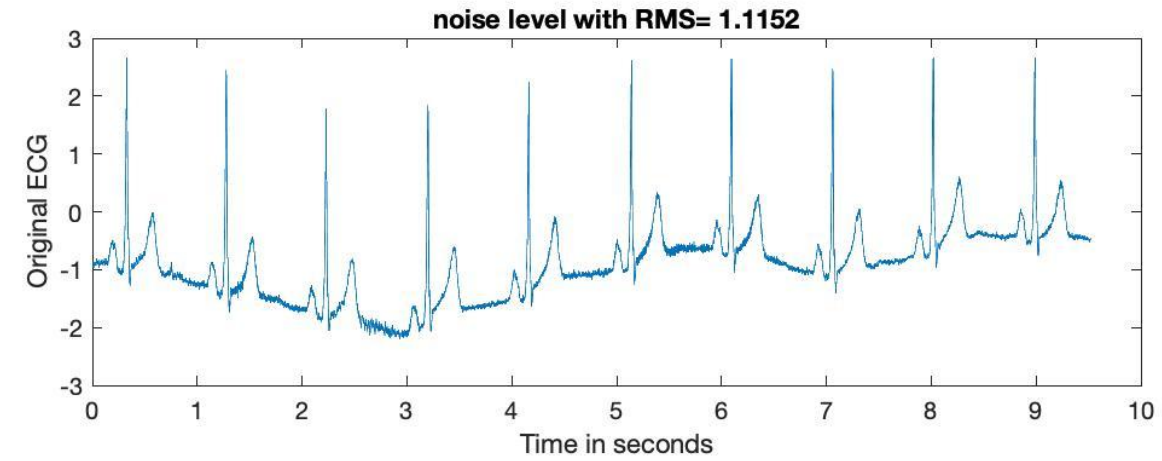
Problem 1

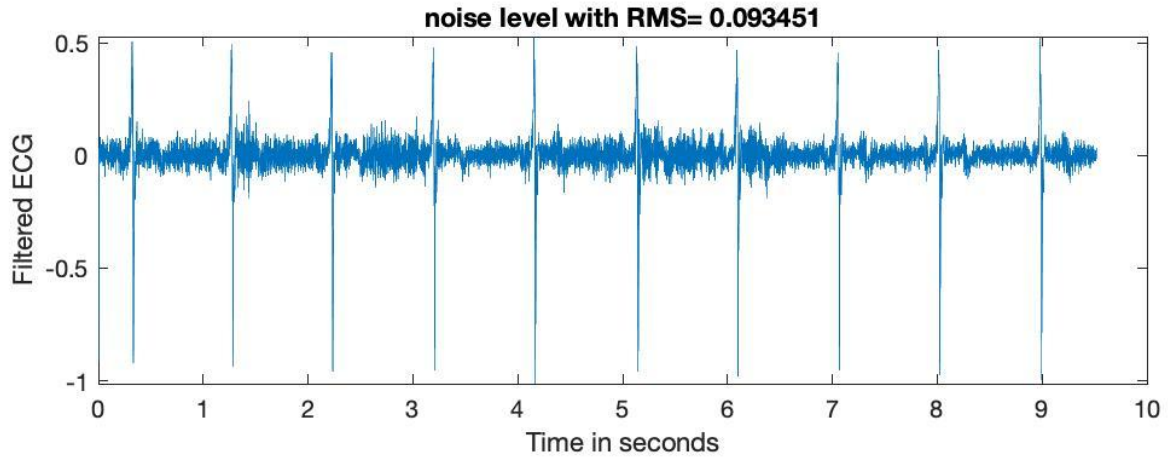
- Cross-correlation of o1 and f3 during 4.72~5.71 secs
- Fft peak at f = 9.0452 Hz
- Period of correlation coeff≒ 0.1106s, which means signal f3 delay 0.1106s compare to o1



Problem 2

- Three-point central-difference of ECG with low frequency noise
- We can observed that filtered ECG has reduced the low frequency noise
- RMS reduced by 1.021749





Problem 2

- BPM of the ECG signal = 63.0318 /min
- Calculated by Filtered ECG, with minpeakheight=0.45 minpeakdistance=100