

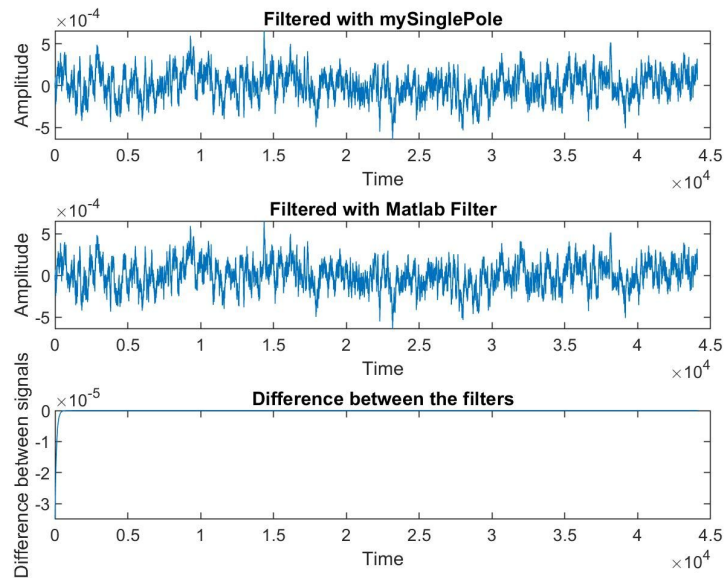
Assignment 4: Filtering Discussion

Chalece Delacoudray

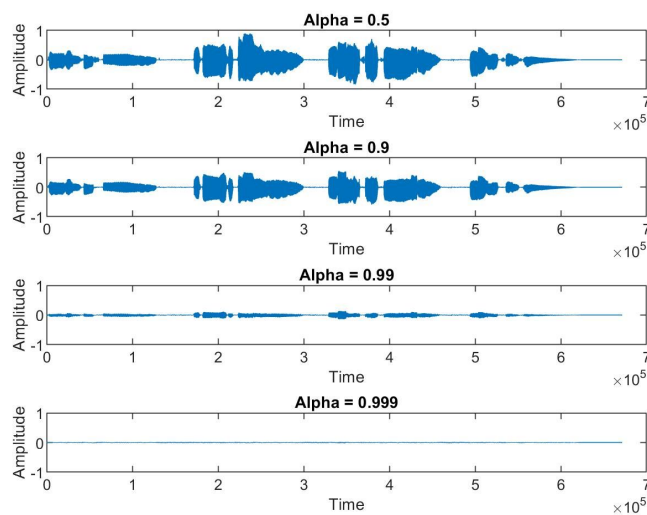
Shauna Morrissey

Github repository: <https://github.com/smorrisey07/Assignment-4>

3. Based on the plot, the implemented filter visually seems to match the implementation using Matlab's filter function. The only difference in the two implementation methods is in the first sample. Since the filter is dependent on the output value for the sample before it, the filter begins on the second sample. The difference is very small.



4. The amplitude is compressed each time the alpha value is raised. Less of the original signal is allowed through. The alpha value of 0.999 is very quiet and almost inaudible.

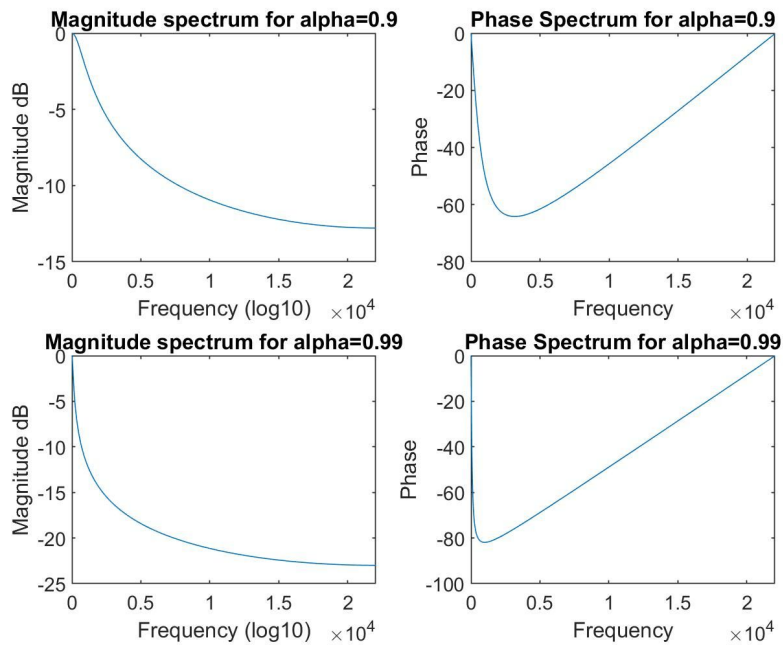


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6. The cutoff frequency for the alpha value of 0.9 is about 3,165. The cutoff frequency for alpha = 0.99 is about 990.



7 and 8. By plotting the spectrograms of the original and the filtered signals, it is easy to verify the peak band at 3,000 Hz. The plots with and without the filter function match, which verifies the implementation of the last two plots.

