

Assignment 01

submitted for
EN3551 - Digital Signal Processing
Department of Electronic and Telecommunication Engineering
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Progress on GitHub [↗](#)

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1 Harmonic Detection

Question 03 Five subsets of the provided signal were formed as described. The magnitude plots of the DFTs of each of these subsets are indicated in Figure 1.

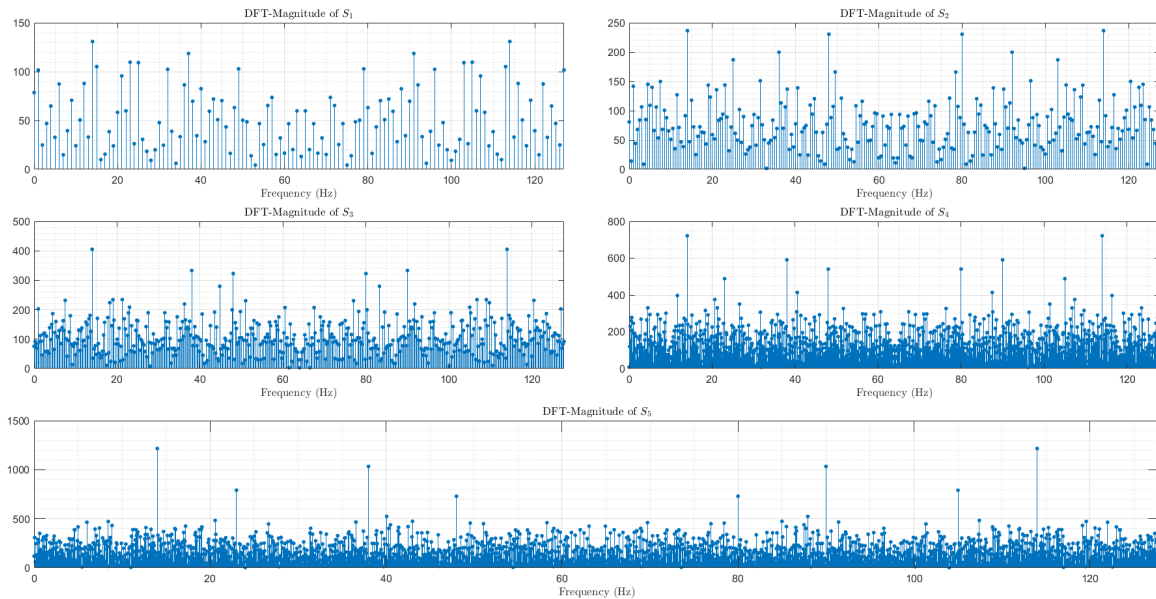


Figure 1: DFT-magnitude plots of signals S_1 through S_5

Question 04 We use this code. Figure 1 shows the magnitude plot resulting from averaging the DFTs of $L = 14$ consecutive subsets taken from the given signal.

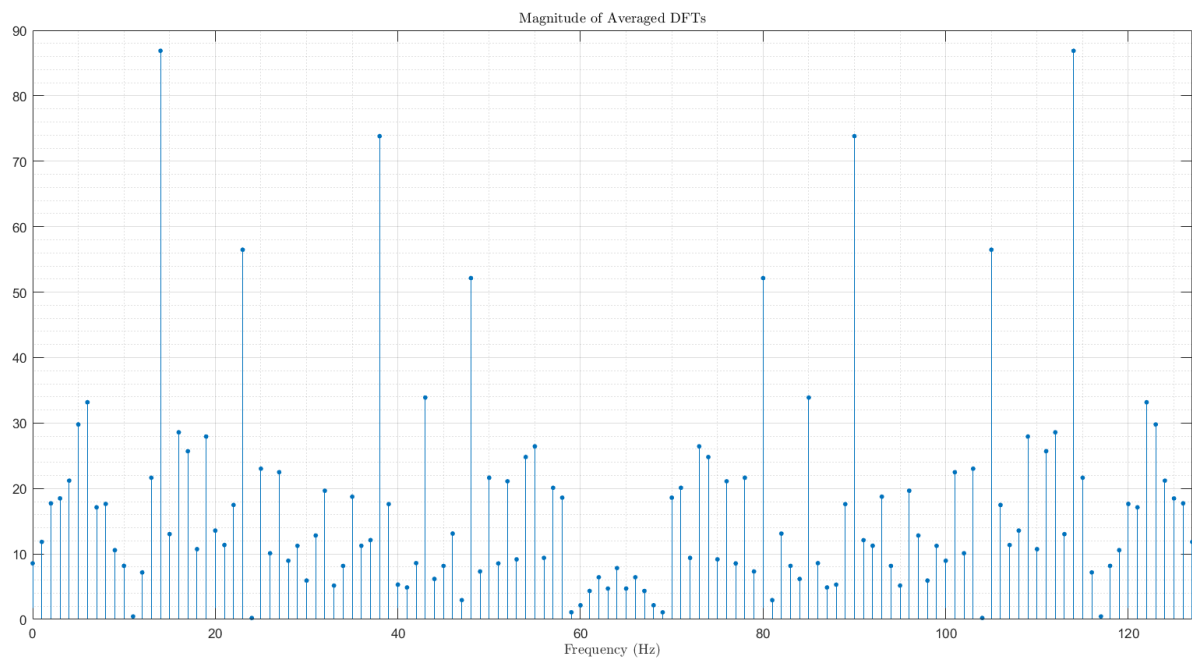


Figure 2: Magnitude plot of the averaged DFT over several subsets

2 Interpolation

A Code Snippets

A.1 Harmonic Detection

A.2 Interpolation