

EEE5502 Foundations of Digital Signal Processing Code 3

Hudanyun Sheng

Question #3:

(a) The random signal $x[n]$ is shown in the plot below:

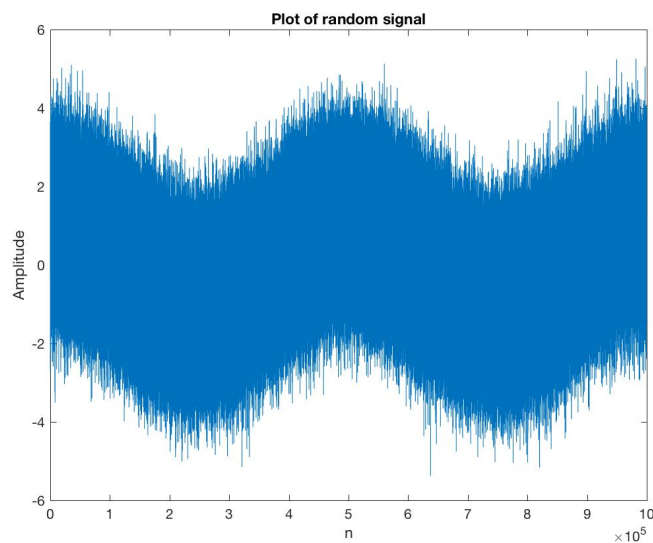


Figure 1: random signal $x[n]$

(b) The plot of signal $x[n]$ and $y_1[n]$ is shown in the plot below:

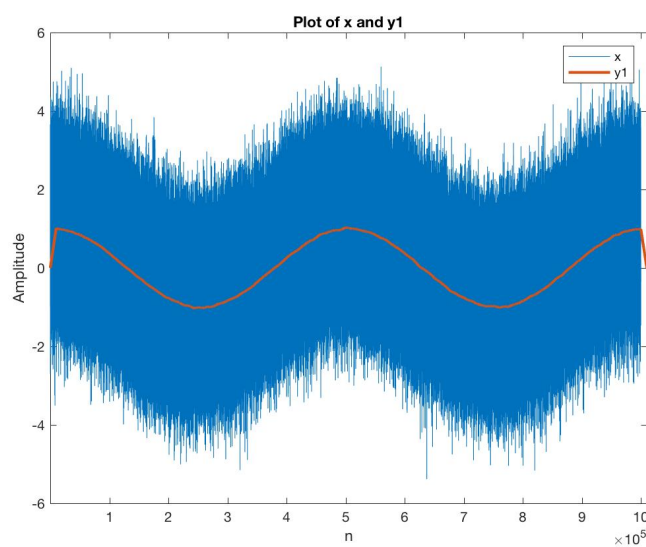


Figure 2: Random signal $x[n]$ and the result of convolving it with an average filter

(c) The overall shape of y_1 looks similar to x , but x has a much larger variance.

(d) The plot of signal $x[n]$, $y_1[n]$ and $y_2[n]$ is shown below:

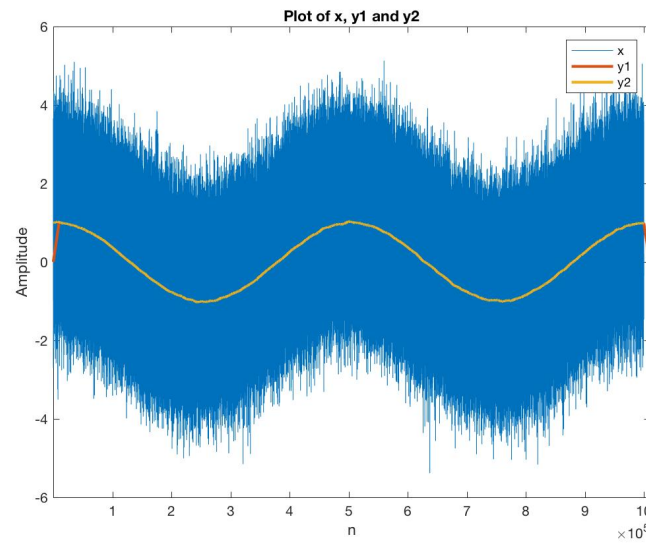


Figure 3: Random signal $x[n]$, the result of convolving it with an average filter $y_1[n]$, the result using Fourier transform $y_2[n]$

Question #4:

My UFID is 21959681. The name of matching music file is "rudenko_15.mp4".

```
36 - idx11 = idx1-length(findme)+1;
```

Command Window
Elapsed time is 60.304011 seconds.
The name of the matching music file is rudenko_15.mp4
fx >>