Meeting Updates:

A. SNR calculation:

I am calculating the SNR of before plugging in DNF and after as follows:

1. Before:

$Power_{noisysignal} = \frac{1}{N} * \sum_{i=0}^{N} (noisysignal)^2$

$Power_{noise} = \frac{1}{N} * \sum_{i=0}^{N} (noise)^2$

$SNR_{before-dnf} = 10 * \log 10(\frac{Power_{noisysignal}}{Power_{noise}})$

2. After:

   $Power_{denoisedsignal} = \frac{1}{N} * \sum_{i=0}^{N} (denoisedsignal)^2$

   $Power_{noise} = \frac{1}{N} * \sum_{i=0}^{N} (noise)^2$

   $SNR_{before-dnf} = 10 * \log 10(\frac{Power_{denoisedsignal}}{Power_{noise}})$

3. Compare both SNRs and check for imporevement!

   Subject 0:

   `SNR ORIG: 7.182591902737396 dB`

   `SNR DNF: 34.75591486443795 dB`

   `SNR LMS: 29.381830283101735 dB`

   Subject 1:

   `SNR ORIG: 6.513582801948711 dB`

   `SNR DNF: 48.755588588724514 dB`

   `SNR LMS: 27.10045102619293 dB`

B. Noise addition:

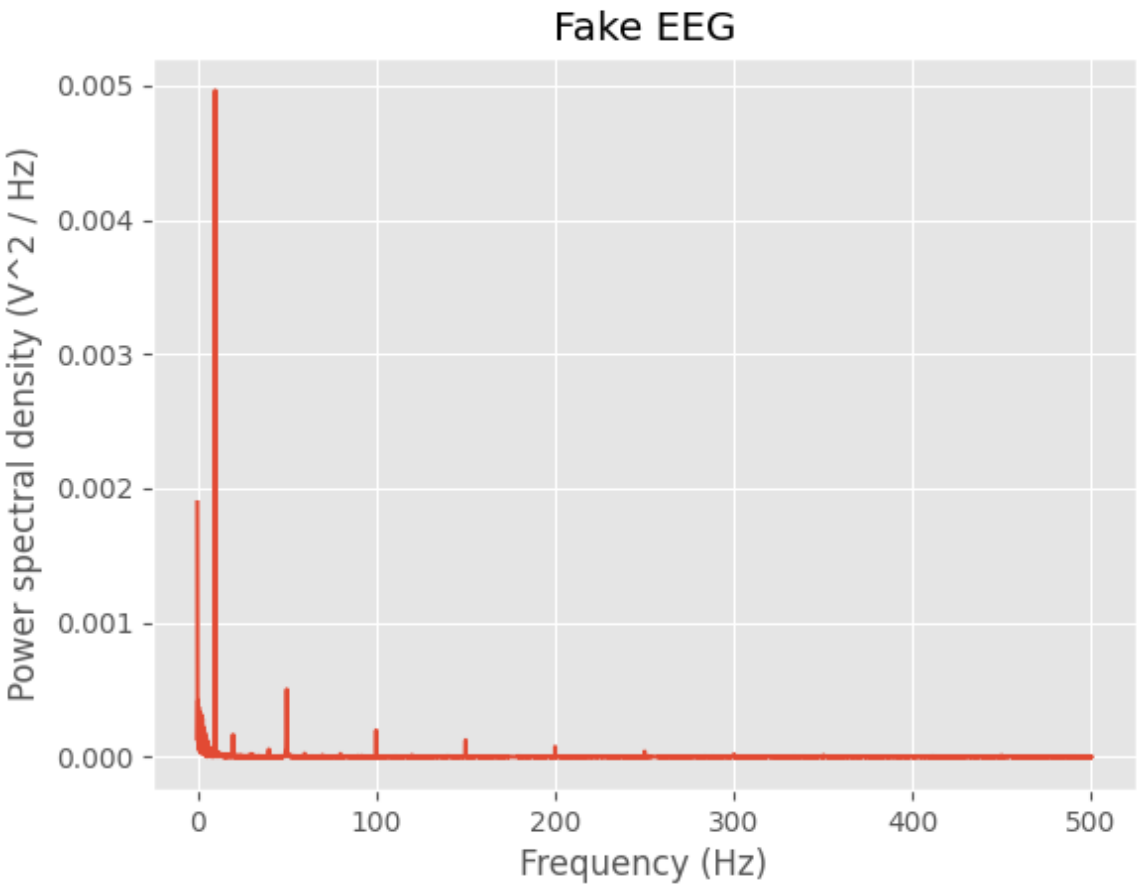
I am looping over noise types and adding them to a generated sine wave of 10 hz as such:

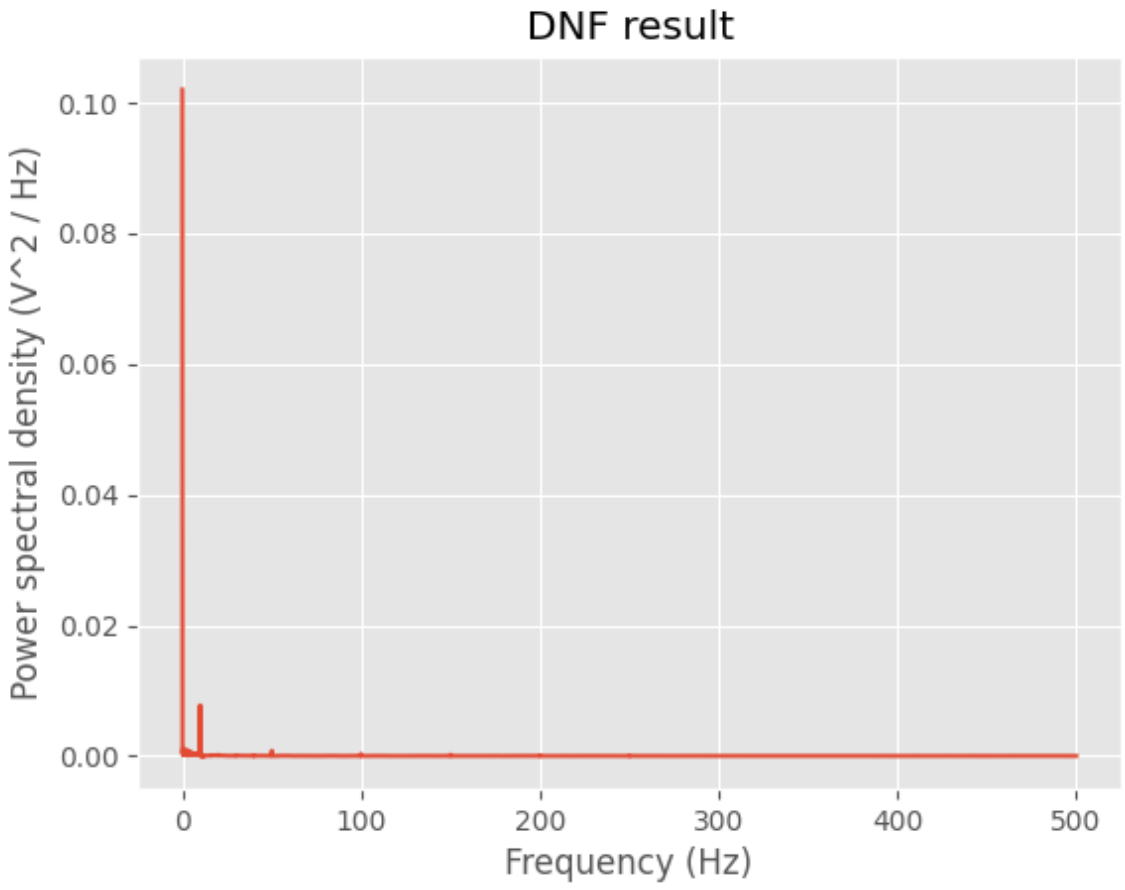
```
for noise in noises
    subject_i = fake_eeg + noise
```

These subjects are converted to Tsv FIles and saved under a folder that the DNF accesses once executed using `./run_all_stats.sh`

C. Plots:

The DNF is performing well from the looks of the SNR results. The plots demonstrate a reduction in the noises especially high frequency noise:


Fake EEG
Power spectral density (V^2 / Hz)
0.005
0.004
0.003
0.002
0.001
0.000
0
100
200
300
400
500
Frequency (Hz)


DNF result
Power spectral density (V^2 / Hz)
0.10
0.08
0.06
0.04
0.02
0.00
0
100
200
300
400
500
Frequency (Hz)