

CS578: Project on Speech Enhancement

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This is by far the shortest announcement of project in this course. During this project you will develop a speech enhancement tool in Matlab.

1. Spectral subtraction and Wiener filtering:

You will use the sound `furelise-1000z.wav` and the Matlab code `Project4.m` with which the noise version of the initial signal was created (at a global SNR of 10dB).

Please follow the description provided in the corresponding series of lectures to develop two enhancement systems: One based on spectral subtraction and another based on Wiener filter. Use the fact that the first 1000 samples of the signal contained only zeros, to estimate the power spectrum of the additive noise.

Please provide Matlab code and write down very briefly your observations.

2. Give us your voice:

Record your voice (trying to avoid noisy recording conditions) and add noise with a certain level of additive noise using the example above. Use the previous Matlab code you wrote to enhance you noisy voice signal.

You may use 16000 Hz as sampling frequency during your recording and 16 bits resolution.

Report briefly the performance of your enhancement tool on your voice.

Answers may be given in Greek or in English. Return the functions you wrote by yourself.