

Background reading: Read chapters 2-5 (Historical Background) in Gold & Morgan. This is light reading, to give you some perspective on the course.

Web page: Create a web page for your contributions to this course. It doesn't have to be anything fancy, just somewhere to bring together your results. If you've never made a web page before, it's easy - look for one of the many basic HTML tutorials on the web. Specific information on setting up a web page from your Columbia CUIT account can be found at: <http://www.columbia.edu/acis/webdev/create.html>. Email me a pointer to your web page (to dpwe@ee.columbia.edu).

Reading assignment: J. L. Flanagan, R. M. Golden, "Phase Vocoder", Bell System Technical Journal, November 1966, 1493-1509. This is the original introduction of the time-scale modification idea using the Fourier transform that I mentioned in class. You can download a scanned version from: <http://www.ee.columbia.edu/~dpwe/e6820/papers/FlanG66.pdf>. Write one paragraph summarizing the paper, and another paragraph about anything that strikes you about this paper issues or questions, just to encourage you to formulate your own ideas, rather than simply accepting everything the authors present. Post this on the Courseworks discussion board topic relating to this paper.

Practical assignment: Download the following soundfile: http://www.ee.columbia.edu/~dpwe/e6820/matlab/mdwh0_sx305.wav. Read it into Matlab using wavread and plot both narrow and wideband spectrograms of it using specgram (typing help wavread etc. at the Matlab prompt will give you help on the usage of each command). Make sure you include a colorbar, and choose a sensible dB color range (no more than 100 dB). Add the spectrograms to your web page (see e.g. print -djpeg). What is the approximate fundamental frequency of the vowel in the word "chives"? What are the formant frequencies?

If you want to play with the timescale modification algorithms I demonstrated in class, you can find both Solafs and the Phase Vocoder on my Matlab examples page, <http://www.ee.columbia.edu/~dpwe/resources/matlab/>

Project: Make a part of your web page to hold initial ideas for your project. Look at the project ideas page on the course website. Write a few lines about the kind of project or subject area you think you might pursue, which can equally be something completely different.