

ECE 992 Speech Signal Processing

Announcement for Spring 2008

This course will cover topics on the theory and application of discrete time speech signal processing. First the speech production mechanism and anatomy will be addressed, as well as linear models of speech production. Next, five speech signal analysis and synthesis methods will be introduced: pole-zero speech models, homomorphic processing, short-time Fourier transform processing, filter banks and sinusoidal synthesis and analysis. The course will also discuss frequency domain pitch and voicing estimation. The course will conclude with a look at applications of speech processing, with topics selected from the following areas: speech modification, speech coding, speech enhancement and speaker recognition.

Textbook: Thomas Quatieri, *Discrete-Time Speech Signal Processing*, Prentice Hall, 2001.

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Prerequisites:

1. Introductory digital signal processing course (e.g. ECE 714/814).
2. Matlab experience.