EEL 6586: AUTOMATIC SPEECH PROCESSING
SPRING 2006

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Office hours: MTW 7th period (1:55-2:45pm)

TA: TBA

Prerequisite: EEL5701

Class Meeting: MWF 4th period (10:40-11:30pm) in LAR 330

Class Homepage: http://www.cnel.ufl.edu/hybrid/courses/EEL6586

Required Textbook: Spoken Language Processing: A Guide to Theory, Algorithm and System Development by Xuedong Huang, Alex Acero, Hsiao-Wuen Hon, Raj Reddy Prentice Hall PTR; ISBN: 0130226165

Reference Books:

- Speech Communications : Human & Machine by Douglas O'Shaughnessy, IEEE Press, Hardcover 2nd edition, 1999; ISBN: 0780334493.
- Speech and Audio Signal Processing : Processing and Perception of Speech and Music by Nelson Morgan and Ben Gold, July 1999, John Wiley & Sons, ISBN: 0471351547
- Digital Processing of Speech Signals, Rabiner and Schafer, Prentice Hall, 1978.
- Fundamentals of Speech Recognition, Rabiner and Juang, Prentice Hall, 1994.

- Discrete-Time Speech Signal Processing: Principles and Practice by Thomas F. Quatieri Publisher: Prentice Hall; ISBN: 013242942X; 1st edition (October 29, 2001)
- Speech Processing and Synthesis Toolboxes by Donald G. Childers, John Wiley & Sons, September 1999; ISBN: 0471349593

Course Topics:
The course covers the basics of speech processing, synthesis, and recognition. Homework assignments include writing Matlab programs to process actual speech signals. Course topics include:

* Fundamentals of speech science
* Modeling speech production
* Short-term processing of speech
* Linear prediction analysis
* Cepstral analysis
* Speech coding and synthesis
* Speech enhancement
* Recognition using templates and DTW
* Recognition using hidden Markov models

Tentative Grade Determination:

1/3 Homework
1/3 Exam 1
1/3 Final Project