EEL 6586 - AUTOMATIC SPEECH PROCESSING - Spring 2002

Instructor: John G. Harris
Office: NEB 453
Phone: (352) 392-2652
Email: harris@cnel.ufl.edu
Homepage: http://www.cnel.ufl.edu/hybrid/harris.html
Office hours: MTW 2-3pm

TA: Mark D. Skowronski
Office: NEB 288
Phone: N/A
Email: markskow@cnel.ufl.edu
Homepage: http://www.cnel.ufl.edu/~markskow
Office hours: TBA

Prerequisite: EEL5701

Class Meeting: MWF 6th period (12:50-1:40am) in CSE122

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 (April 25, 2001) Prentice Hall PTR; ISBN: 0130226165

Reference Books:

- Speech Processing and Synthesis Toolboxes by Donald G. Childers, John Wiley & Sons, September 1999; ISBN: 0471349593
- Speech Communications : Human & Machine by Douglas O'Shaughnessy, IEEE Press, Hard-cover 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.

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

Key Dates: TBA