Natural Language Understanding (CAP 6640) SPRING-13
Fernando Gomez. Office Hours: M-T-Th from 3 to 4 pm

Week 1 Lecture by Instructor
Main Issues in NLP
 Applications
 * Search Engines
 * Question Answering
    * Watson Jeopardy
 * Machine Translation
 * Sentiment Analysis
 * Social Networks
 * Bioinformatics
 * Dialogues and User's Models
 * High level programming specifications
 * Knowledge Acquisition

  POS Tagging Chapter 8
   B. Santorini "Part of Speech Tagging Guidelines"
   WordNet
Parsing
Semantics
Tools: NLTK

Some Research Topics for Term Paper

 WSD (word sense disambiguation)
  * Supervised Methods
  * Unsupervised Methods
  * Knowledge-Based Methods

 Question-Answering Systems
   * Search Engines
   * Trec
   * Watson

 Dialogue Modeling

 Social Networks

 Natural Language Generation

 Bioinformatics
 Summarization

 Sentiment Analysis
  * PMI
  * Machine Learning Methods

 Knowledge Acquisition
  * Pattern Extraction
  * Machine-Learning Based
  * Automatic Extraction from
      Encyclopedias

 Machine Translation
  * Statistical ML

 Semantic Roles
  * PropBank
  * FrameNet
 Language and Cognition

The major goals of this course are: a) to perform research on a topic selected by the student b) to write a paper describing that research and d) to read and explain state of the art research papers.

After the second week, students will present research papers on topics of their choosing. Every student in class is responsible for summarizing the paper that is presented that day. The summary should be about one page long. Students should write a proposal (2 or 3 pages long) explaining the selection of their research topic. That proposal must be written by the 4th week of the semester or earlier. Your paper will be judged using the criteria that are normally applied to papers submitted to good conferences. The closer your term paper is to be accepted in a good conference the better the grade it will get. The ideal paper is a paper that presents a research topic, a discussion of the related research, and an implementation to test the ideas presented. We will be discussing many papers in class that fit that pattern. Students should check the status of their paper with the instructor periodically after the initial proposal.

Grading: Summaries 10%, Proposal + Presentations 10%, Term Paper 80%. Attendance and participation in class is important in this course. I will deduct points if a student develops a pattern of not attending class. I will inform him/her if that is the case. I will use the +/- system in grading.

(A- 90-92, B+ 87-89, B 83-86, B- 80-82, C+ 77-79, C 73-76, C- 70-72, D+ 67-69, D 63-66, D- 60-62, F 59-0).