LING 571 - Deep Processing Techniques for Natural Language Processing
Winter 2016
Syllabus

Course Evaluation Form

Days	Time (P.M.)	Classroom
Mondays and Wednesdays	3:30-4:50	Savery 264

	Instructor	Teaching Assistant
Name:	Gina-Anne Levow	Glenn Slayden
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Office:	Guggenheim 418D	Guggenheim 407
Office Hours:	Thu 12:30-1:30, Fri 1:30-2:30, or by appointment (1/15: 3:00-3:30)	Mon 2:30-3:30 or Skype by appointment

Course description

This course covers algorithms for associating deep or elaborated linguistic structures with naturally occurring data, covering parsing, semantics, and discourse.

Textbook

The course textbook is *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition*, 2nd edition, by Daniel Jurafsky and James Martin.

Prerequisites:

- CSE 326/373 (Data Structures) or equivalent
- Stat 390 (Probability and Statistics for CS) or equivalent
- Formal grammars, languages, and automata
- Programming in one or more of Java, Python, C/C++, or Perl
- Linux/Unix commands

Course Resources

- GoPost Class Discussion Board
- CollectIt Assignment Drop Box
- Gradebook
- Adobe Connect Meeting Room

Grading

- 100%: Homework Assignments
- Up to 2% adjustment for significant in-class or GoPost participation

Course Mechanics

Additional detailed information on grading, collaboration, incompletes, etc.

Schedule

Subject to change without notice.

Date	Topics	*Jurafsky & Martin*	Additional Readings	Assignment out	Slides	Adobe Connect Recording
January 4	Intro to Deep Processing for NLP; Syntax	Chapter 1, 12			pptx pdf	link
January 6	CFGs and Parsing	Chapter 12, 13.1-13.3	Patas and Condor	HW #1: Due Jan 12, 11:45pm	Computing & HW CFGs and Parsing	link
January 11	CKY; CNF	Chapter 13.4.1			CKY parsing CNF example CKY example	link
January 13	Parsing: CKY, Earley	Chapter 13.4.2-13.4.3		HW #2: Due Jan 19	Earley HW#2	link
January 18	Martin Luther King Day	No Class				
January 20	Probabilistic and Lexicalized CFGs	Chapter 14-14.11		HW #3: Due Jan 26	Earley+PCFGs HW#3	link
January 25	PCFGs: evaluation; improvement				Evaluation & Improvements	link
January 27	Dependency Parsing	Chapter 12.7	De Marneffe et al, 2006 McDonald et al, 2005	HW #4: Due Feb 2	Dependency Parsing HW#4	link
February 1	Dependency (cont'd) + Features	Chapter 15-15.4			Dependency; Features	link
February 3	Advanced Parsing Topics *agree* (Glenn	Chapter 15.5-15.7		HW #5: Due 2/9	Features & HW#5 TFS	link

	Slayden)				unification	
February 8	Semantics	Chapter 17			Semantics Intro	link
February 10	Semantics II	Chapter 18		HW #6: Due 2/16	Semantic Analysis HW6	link
February 15	President's Day: No class					
February 17	Shallow(er) Semantics Semantic roles & labeling	Chapter 19.4, 20.9	Jurafsky&Gildea, 2002, p. 1-19.		Semantic Roles	link
February 22	Lexical, distributional semantics	Chapter 19.1-19.3,20.1-20.4, 20.7, 20.10			Lexical, Distrib. Semantics	link
February 24	Distributional, Thesaurus-based Models	Chapter 20		HW #7: Due March 1	Distributional & Thesaurus-based models HW#7	link
February 29	Intro to Discourse	Chapter 20, 21.0	Resnik WSD, esp. Sec 5.1		Thesauri & Discourse	link
March 2	Computational Discourse Reference	Chapter 21.4-21.8	Ragunathan et al, 2010	HW #8: Due March 8	Co-reference HW#8	link
March 7	Computational Discourse Structure	Chapter 21.1-21.3			Coreference & Coherence	link
March 9	Wrap-up			HW #9: Due March 15	Wrap-up HW #9	link