Final Review

Linguistics 384

FINAL: Monday, March 13, 2006
1:30-3:18PM

1 Topics to be covered

- Machine Translation (MT)
- Dialogue Systems
- Computer-Aided Language Learning (CALL)

2 Format of the exam

The exam will be held in the usual classroom from **1:30-3:18PM**. You will have the entire 108 minutes. Arrive late at your own cost. The exam is closed-book and closed-notes. No calculators will be allowed. If problems require calculation, it will be sufficient to set up the equations.

1. Matching: 10-15 terms from after the midterm [see back]

2. Calculations and problem solving: 5-7 questions

    - Dialogue mark-up: dialogue act tagging, adjacency pairs, speech acts
    - Pronoun resolution algorithms
    - Finite-state automata and regular expressions: drawing and reading
    - Word alignment, bag-of-words method, and probability calculations

3. Short answer: answer 3-4 out of 4-6 sets of questions
    ⇒ How do the various technologies work?

    - General approaches to computational linguistics research: knowledge-based approach vs. statistical approach
    - MT systems: transformer systems, transfer systems, and interlinguas – how do they work and differ
    - Gricean maxims
    - Dialogue system components and architecture
    - Useful NLP technologies for CALL
    - CALL: exercise types (motivations, pros and cons), feedback types

3 Terms to know

MT	Dialogue systems	CALL
translation	Turing Test	second language acquisition
machine translation	ELIZA	implicit instruction
(lexical) ambiguity	pattern recognition	explicit instruction
intelligibility	canned phrases	transfer errors
source language	knowledge representation	frame-based systems
target language	discourse	algorithm
hyponym	turn-taking	concordance
hypernym	adjacency pairs	lemmatization
synonym	utterances	morphological generation
interlingua	common ground	syntactic generation
translation triangle	backchannels	metalinguistic knowledge
dictionary	maxims	mal-rules
lexicon	actions	error typology
lexical gap	performative verbs	student model
light verb	direct speech acts	lemmas
idiom	indirect speech acts	feedback
reversibility	template	explicit correction
transformer architecture	schema	recast
direct transfer	discourse purpose	clarification request
transfer component	subdialogues	metalinguistic feedback
comparative grammar	reference	elicitation
robustness	pronouns	repetition
text alignment	coreference	
sentence alignment	pronoun resolution	
word alignment	selectional restrictions	
machine learning	human-computer interaction	
training data	corpora	
bag of words	annotation	
underlying representation	natural dialogues	
taboo words	Wizard of Oz dialogues	
	architecture	
	state transition network	
	frame-based systems	
	confirm	
	repair	