CS 585: Natural Language Processing

Texts


Objectives

- Define a sublanguage and collect statistics.
- Construct a sublanguage lexicon.
- Design a sublanguage grammar.
- Build a simple parser given a grammar.
- Construct a simple generator.
- Locate and evaluate available parsers and generators.
- Build a natural language interface.
- Locate corpora and other natural language resources.
- Choose a speech recognition system for a given application.

Prerequisites

- CS 480, Linear algebra, Probability theory.

Syllabus

- Course goals, projects and assessment. Overview of field 1.5 hours
- Grammars and parsing 6.0 hours
- Semantic representation - logic forms, relations and cases 3.0 hours
- Features and augmented grammars 4.0 hours
- Unification grammars. Lexical functional grammar 2.0 hours
- Discourse structure 3.0 hours
- Discourse context and reference 3.0 hours
- Text generation 4.5 hours
- Discourse markup and analysis 3.0 hours
- Building a lexical database 3.0 hours
- Resolving ambiguity 1.5 hours
- Efficient parsing 2.5 hours
- Statistical approaches and machine learning 2.0 hours
- Natural language interfaces to operating systems 1.5 hours
- Understanding input and generating responses in intelligent tutoring systems 1.5 hours
- Student project reports 3.0 hours

Total 45 hours

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