Speech understanding

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ABSTRACT

Research on speech understanding is adding new dimensions to the analysis of speech and to the understanding of language. The acoustic, phonetic, and phonological processing of speech recognition efforts are being blended with the syntax, semantics, and pragmatics of question-answering systems. The goal is the development of capabilities that will allow a person to have a conversation with a computer in the performance of a shared task. Achievement of this goal will both require and contribute to a more comprehensive and powerful model of language—with significant consequences for linguistics, for computer science, and especially for computational linguistics.

Syntax and computation

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ABSTRACT

Algorithms have been developed for generating and parsing with context-sensitive grammars. In principle, the contexts to which a grammar is sensitive can be syntactic, semantic, pragmatic, or phonetic. This development points up the need to develop a new kind of lexicon, whose entries contain large amounts of several kinds of contextual information about each word or morpheme, provided in computable form. Ways in which both the form and content of the entries differ from those of traditional dictionaries are indicated.

Literary text processing

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ABSTRACT

To date, computer-based literary text processing bears much greater similarity to techniques used for information retrieval and, to some degree, for question-answering, than it does to techniques used in, for example, machine translation of 'classical' artificial intelligence. A literary text is treated not as 'output' in a process to be emulated nor as a string to be transformed into an equivalent verbal representation, but, rather, as an artifact to be analyzed and described.

The absence of process as an integrating concept in computer-based literary text processing leads to very different definitions of linguistic domains (such as semantics and syntactics) than is the case with, for example, artificial intelligence. This presentation explores some of these distinctions, as well as some of the implications of more process-oriented techniques for literary text processing.