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Understanding natural language â˜†

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Abstract

This paper describes a computer system for understanding English. The system answers questions, executes commands, and accepts information in an interactive English dialog.

It is based on the belief that in modeling language understanding, we must deal in an integrated way with all of the aspects of languageâ€”syntax, semantics, and inference. The system contains a parser, a recognition grammar of English, programs for semantic analysis, and a general problem solving system. We assume that a computer cannot deal reasonably with language unless it can understand the subject it is discussing. Therefore, the program is given a detailed model of a particular domain. In addition, the system has a simple model of its own mentality. It can remember and discuss its plans and actions as well as carrying them out. It enters into a dialog with a person, responding to English sentences with actions and English replies, asking for clarification when its heuristic programs cannot understand a sentence through the use of syntactic, semantic, contextual, and physical knowledge. Knowledge in the system is represented in the form of procedures, rather than tables of rules or lists of patterns. By developing special

procedural representations for syntax, semantics, and inference, we gain flexibility and power. Since each piece of knowledge can be a procedure, it can call directly on any other piece of knowledge in the system.

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