

Using the Wizard-of-Oz technique  
to gather data for natural language interfaces

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ABSTRACT

One of the most pressing problems in developing natural language interfaces is scaling up the system. There are many accepted theories and techniques for developing natural language interfaces but there is a bottleneck in the acquisition of data for any application domain. Many natural language interfaces fail because they do not have enough knowledge about language use in the domain. We call this the brittleness problem. It has recently been discovered by empirical studies that natural language systems fail 45% of the time because of inadequate knowledge of the ongoing dialogue. We call this the reduced context problem.

There are many ways in which data can be gathered for a domain and it is argued here that a useful methodology is the Wizard-of-Oz technique. The Wizard-of-Oz technique is one where subjects interact with a computer through typed dialogue and are told that they are conversing with the computer. Subjects' utterances are sent to another monitor where a "Wizard" sends back a reply to the subject monitor. Results are shown for a Wizard-of-Oz experiment which was conducted in the domain of computer operating systems. The results verify that the Wizard-of-Oz technique is indeed useful in the development of dialogue systems. Also, the technique possibly provides a solution to the brittleness and reduced context problems.

It is possible that the wizard technique can be used in conjunction with other mechanisms to formulate automatic and iterative methods for the development of natural language dialogue systems, rather than the subjective construction of such models.