A Robust Dialogue Agent for Collaborative Problem Solving (invited presentation)

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While plan- or agent- based models provide interesting formalisms for producing dialogue agents, most robust dialogue system use much simpler technology based on finite state machines and/or slot filling models. Such simpler models allow the designers to encode strong expectations that enable robust processing, however the complexity of the tasks they can represent is quite limited. We are developing dialogue agents that not only can execute hand-coded tasks, but can also learn new tasks from the user through combined demonstration and dialogue. All system behavior, including its dialogue capabilities, is driven by the execution of declaratively specified tasks that model the collaborative problems solving process in a domain-independent manner. We will describe this model and explore how it contributes to producing robust dialogue behavior on a number of different levels. I will also show running examples of our system as it learns and executes new procedures that involve finding and using information on the world wide web.