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# A Strategy for Information Presentation in Spoken Dialog Systems

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## Abstract Authors

In spoken dialog systems, information must be presented sequentially, making it difficult to quickly browse through a large number of options. Recent studies have shown that user satisfaction is negatively correlated with dialog duration, suggesting that systems should be designed to maximize the efficiency of the


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interactions. Analysis of the logs of 2,000 dialogs between users and nine different dialog systems reveals that a large percentage of the time is spent on the information presentation phase, thus there is potentially a large pay-off to be gained from optimizing information presentation in spoken dialog systems.

This article proposes a method that improves the efficiency of coping with large numbers of diverse options by selecting options and then structuring them based on a model of the user's preferences. This enables the dialog system to automatically determine trade-offs between alternative options that are relevant to the user and present these trade-offs explicitly. Multiple attractive options are thereby structured such that the user can gradually refine her request to find the optimal trade-off.

To evaluate and challenge our approach, we conducted a series of experiments that test the effectiveness of the proposed strategy. Experimental results show that basing the content structuring and content selection process on a user model increases the efficiency and effectiveness of the user's interaction. Users complete their tasks more successfully and more quickly. Furthermore, user surveys revealed that participants found that the user-model based system presents complex trade-offs understandably and increases overall user satisfaction. The experiments also indicate that presenting users with a brief overview of options that do not fit their requirements significantly improves the user's overview of available options, also making them feel more confident in having been presented with all relevant options.


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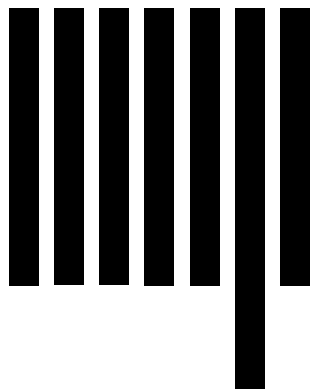
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