

EXPLOITATION OF CONTEXT INFORMATION FOR NATURAL SPEECH DIALOGUE MANAGEMENT IN CAR ENVIRONMENTS

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ABSTRACT

This contribution focuses on a situation- and user-aware approach of multimodal dialogue management implemented in a framework for the automotive environment. A dedicated dialogue manager for driver's interaction with driver information systems (like infotainment and communication systems) as well as driver assistance systems has been developed and tested. One main focus in the development was the ability to make context-dependent decisions. The dialogue manager provides flexible and user-centered speech dialogues and support multimodal interfaces, like buttons or turning knobs combined with speech. For the dialogue control, a frame-based approach is used. The dialogue description is realized in XML which allows for an easy overview over the dialogue structure. Visual outputs are displayed on several screens in the car. The usability evaluation shows an improvement of effectiveness, a higher joy of use through the possibility of submitting several pieces of information in only one dialogue step with natural speech comparing to a menu-based spoken dialogue. The situation-dependent information assistants reached a high acceptance. The test persons rated the context-based way of frame-based interaction as comfortable and important.