

論文内容の要旨

博士論文題目

Reflective Dialogue System Focusing on User's Event

ユーザのイベントに着目する対話システムによる気の利いた応答

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(論文内容の要旨)

This dissertation addressed dialogue systems that generate reflective responses and actions to user utterances. The existing dialogue systems tend to generate not reflective responses and actions that are passive to the user utterances. We proposed architectures to generate reflective responses and actions by focusing on user's events to solve this problem. Since dialogue systems are traditionally categorized into non-task-oriented dialogue systems or task-oriented dialogue systems, we tackled the following three problems of dialogue systems based on this categorization. First, we proposed a model to generate reflective responses on non-task-oriented dialogue. The model selects reflective responses based on events included in user utterances and system responses. Second, we investigated a model to select reflective actions on task-oriented dialogue. The model selects reflective actions based on causality relations between events included in user utterances and system actions. Finally, we developed a model that integrates multimodal information to select reflective actions on multimodal task-oriented dialogue. The model selects reflective robot actions by utilizing user utterances and events included in situations surrounding the user.

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(論文審査結果の要旨)

Reflective responses and actions of dialogue systems mean responses and actions that are not explicitly requested by users, but that would satisfy the users. This research defines this new concept and proposes architectures to generate reflective responses and actions by focusing on user events. The first contribution is a model to generate reflective responses on non-task-oriented dialogue. The model selects reflective responses based on events included in user utterances and system responses. The second contribution is a model to select reflective actions on task-oriented dialogue. The model selects reflective actions based on causality relations between events included in user utterances and system actions. The third contribution is a model that integrates multimodal information to select reflective actions on multimodal task-oriented dialogue. The model selects reflective robot actions by utilizing user utterances and events included in situations surrounding the user.

The thesis research aims to construct a dialogue system that generates reflective responses and actions using multimodal information in real environments. The thesis opened new research directions and showed possibilities for more natural and intelligent dialogue systems and robots. A series of research resulted in one best paper award at the international conference, two high-quality peer-reviewed international journals, one high-quality domestic journal, and two peer-reviewed international conference papers. As a result of the discussion in the thesis committee, the thesis is sufficiently qualified as a Doctoral thesis of Engineering.