



Spoken Dialogue System: machine interacting with humans using voices

Research Topics ● ● ●

To realize human-friendly and helpful robots or computers, the spoken dialogue function, which human beings have in nature, is inevitable. We study basic technologies on dialogue systems using speech, language, and multi-modal information. On the basis of machine learning technologies, we will realize an intelligent spoken dialogue system from various viewpoints, such as signal processing, speech recognition, natural language processing, knowledge processing, user modeling, and multi-modal interaction.

Target System and Techniques ● ● ●

Text chat

Tokyo Olympic Games will be held in 2021.

What is a popular competition?

All! Track and field is ...

Multi-party dialogue robot



Multi-modal dialogue



Mic. array

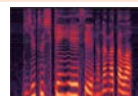


Biosensor

Signal processing



Source separation



Frequency analysis

Pattern recognition

Automatic speech recognition

Spoken dialogue system

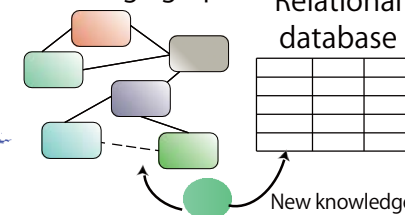
Language analysis and understanding

spoken [Adjective] dialogue [Noun] ...

User state estimation (Impression, etc..)

Knowledge processing

Knowledge graph



Relational database

New knowledge

Themes ● ● ●

- (1) Active learning and online knowledge acquisition during dialogue
- (2) Multi-modal dialogue using social signal proc. and reinforcement learning
- (3) Audio signal processing based on statistical machine learning