

1 Research interests

I believe that for future dialogue systems to coexist with humans, it is crucial to consider the value of an interlocutor, such as their way of thinking and perceiving things. Currently, dialogue systems like ChatGPT are used by many users. However, the information of the interlocutor is only expressed in simplified sentences such as “I like cooking” in many dialogue systems (Lu et al., 2022; Zhang et al., 2018; Tsunomori and Higashinaka, 2024); the dialogue systems cannot consider the interlocutor’s values. Therefore, I am dedicated to researching **dialogue systems for eliciting the interlocutor’s values and methods for understanding the interlocutor’s values from narratives**.

1.1 Dialogue system for eliciting the values of an interlocutor

It is essential to understand the values of an interlocutor to generate responses based on these values. Manual interviews or questionnaires can be considered as a method for collecting the values of the interlocutor. However, manual interviews could pose a considerable burden on the interviewer and it is difficult to explore the responses of the interlocutor in depth using questionnaires. Therefore, methods to collect the values of the interlocutor automatically and naturally during a chat are desirable.

In light of the above, I am conducting research on a question-guiding dialogue system that asks specific questions naturally during a chat to elicit the values of the interlocutor. The question-guiding dialogue system was constructed using a large language model (LLM) and the question-guiding corpus (QGC) constructed by Horiuchi and Higashinaka (2021, 2023). The QGC is a dialogue corpus between humans, where one speaker is instructed to ask questions such as “How old are you?” and “Do you have any specialties?” in a natural context to the other interlocutor.

I constructed the question-guiding dialogue system by fine-tuning an LLM using the QGC and using OpenAI’s GPT-4. The GPT-4 prompts include dialogue data with natural guiding, which have been manually selected from the QGC. I am currently conducting evaluations of these question-guiding dialogue systems.

Eventually, I will evaluate the question-guiding perfor-

mance for questions related to values, such as “Which is more important to you, life, or work?” or “What do you think about the circumstances of the protagonist in this movie?” In actual dialogues, the interlocutor may not always provide a clear answer to a question. Therefore, I am considering developing a method to evaluate the validity of the answers of the interlocutor and to ask follow-up questions when the response is not as expected. Moreover, in some situations, the interlocutor may not be willing to answer questions directly. Therefore, I would also like to explore the use of indirect questions to elicit information from users in a more sociable manner.

1.2 Understanding the narratives of the interlocutor

The values of the interlocutor are often expressed through narratives, such as stories about their past experiences or impressions of something (Schank, 1990). However, extracting the values of the interlocutor from a narrative is difficult because narratives generally involve complex events.

As a representation of a narrative from which to extract the values of the interlocutor, story intention graph (SIG), a structured format of narratives, will be useful (Elson, 2012). SIG focuses on important elements in the narrative, such as characters, actions, and intentions/motivations; it represents the entire narrative as a graph structure. However, research on automatic SIG generation methods is rare.

Hence, I am conducting research on methods for automatically generating SIGs using LLMs. I am currently developing a SIG generation system using OpenAI’s GPT-4 and creating manually annotated SIGs for evaluation. Furthermore, SIGs can differ depending on the annotator (Lukin et al., 2016). Therefore, I plan to consider methods for evaluating the quality of SIGs.

2 Spoken dialogue system (SDS) research

For SDSs to be used daily in the future, they will engage in dialogue with the same user multiple times. In such cases, SDSs need the ability to remember dialogue histories and make responses considering those dialogue histories.

Recent LLMs can deal with very long inputs; however, generating consistent responses to all input information

is challenging. Furthermore, within publicly available dialogue datasets, few include long dialogue histories (Xu et al., 2022; Yamashita et al., 2023).

Future SDS research should focus on how to collect and use dialogue histories for long-term dialogues, as in Xu et al. (2022) and Tomashenko et al. (2020). In addition, human evaluation of long-term dialogues is more time-consuming and costly than a single-dialogue evaluation. Therefore, I believe that research on high-quality, low-cost automated evaluation methods is important.

3 Suggested topics for discussion

I would like to discuss the following topics:

- Human and AI collaboration: What capabilities are needed in dialogue systems for humans and dialogue systems to collaboratively undertake difficult tasks, such as creative activities or discussions?
- Everyday use of dialogue systems: In everyday scenarios, what will be the most common situations in which dialogue systems are used?
- Reflecting individual preference in LLMs: Many current LLMs are trained on data deemed good for many people using methods like reinforcement learning from human feedback (Ouyang et al., 2022). Under such a circumstance, what methods are promising for reflecting individual preferences in LLMs?

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Biographical sketch



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