Dialogue Management in Human-Robot Interaction

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How can dialogue management techniques facilitate **discovery and use of conversational capabilities** in spoken human-robot conversations?

How can we efficiently evaluate dialogue in human-robot interaction (HRI)?
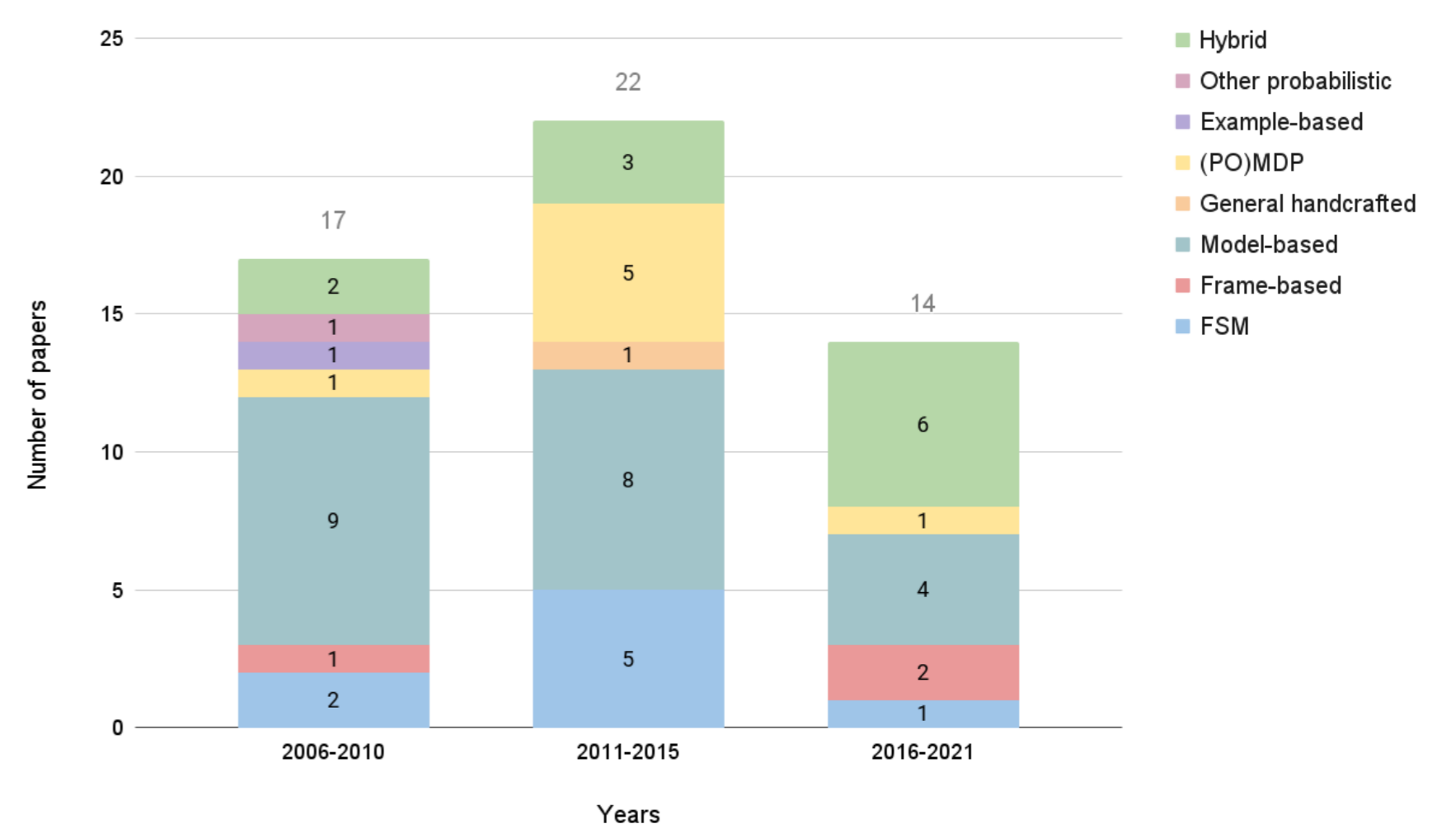
Dialogue Management (DM)

The dialogue manager is, according to Traum and Larsson [2003], responsible for:

1. performing context update of the dialogue,

2. including the context for interpretation of input,

3. coordinating (non-)dialogue modules and

4. choosing the timing and content of the next utterance.

Dialogue management is concerned with determining **what to say** and **when to say it** during a conversation.
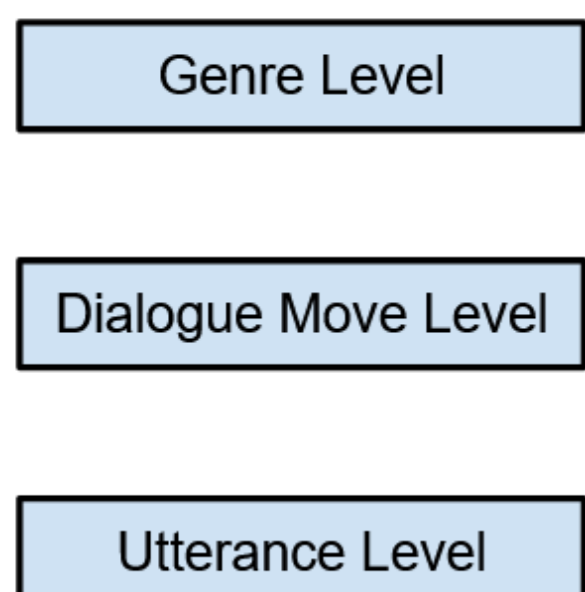
Dialogue Managers in HRI

In 53 papers from 2005 to 2021 that look at dialogue managers used in robots, 33 handcrafted, 9 probabilistic and 11 hybrid approaches were found (Reimann et al. [2023a]).
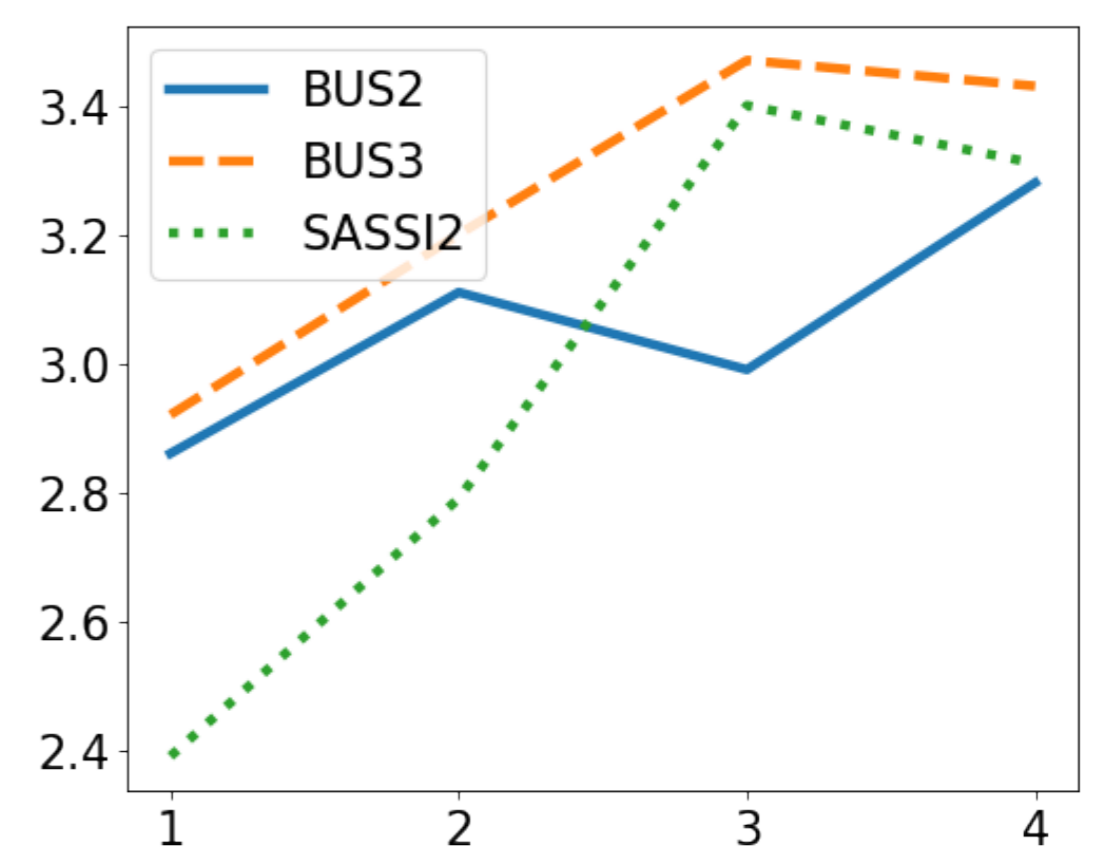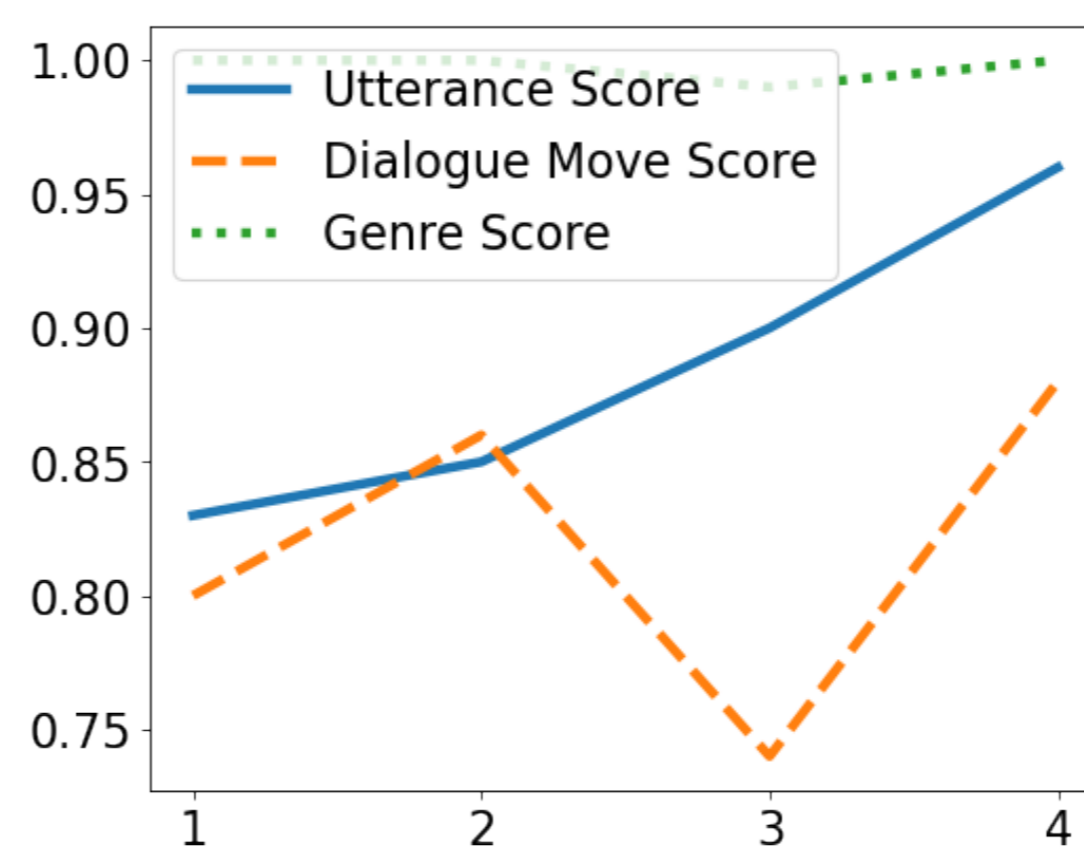

Iterative Evaluation

We used a level-based score system to evaluate a recipe recommendation agent. The approach showed that targeted improvements were possible even with a small number of participants (32 participants distributed over 4 iterations) (Reimann et al. [2023b]).

References

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