CADT Beamer Poster Template

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1. Introduction

- **Symbol Grounding** $\times$ **Chatting**
- Research on language acquisition and symbol grounding (focus on the acquisition of physically grounded knowledge through utterances that express physical things, such as objects and motions)
- Most of the previous studies have focused on learning without any prior symbolic knowledge
- The problem of how to acquire physically grounded knowledge based on grounded utterances through natural interaction has yet to be explored
- We focus on object-teaching utterances as grounded utterances

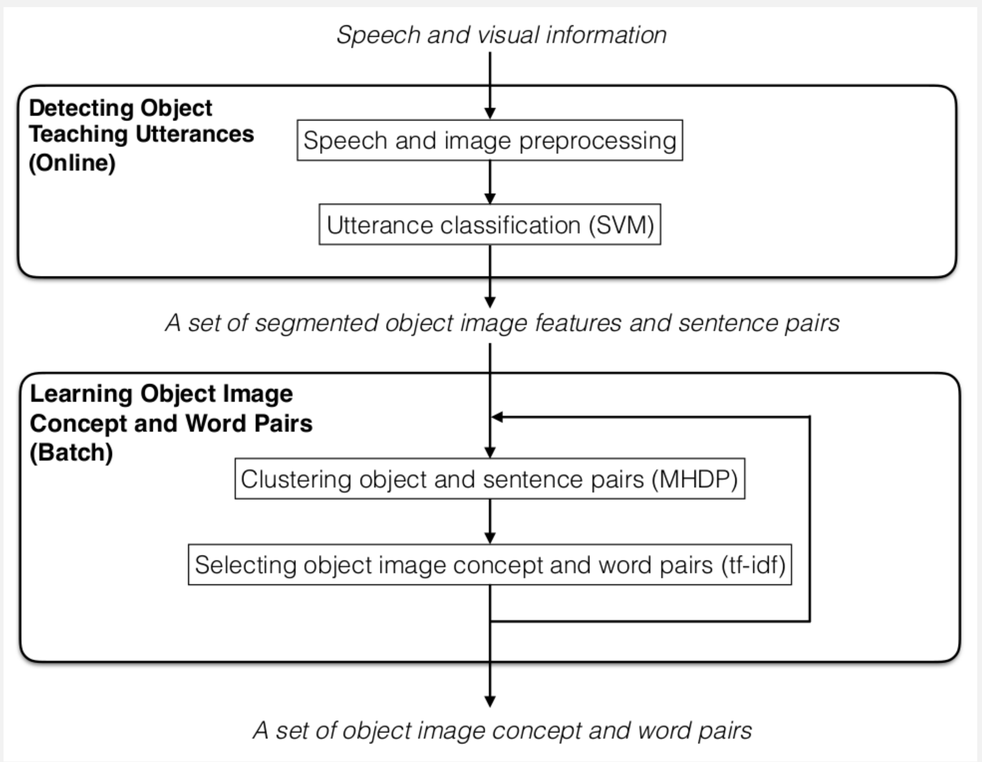
2. Experimental Environment

3. Example Dialogue

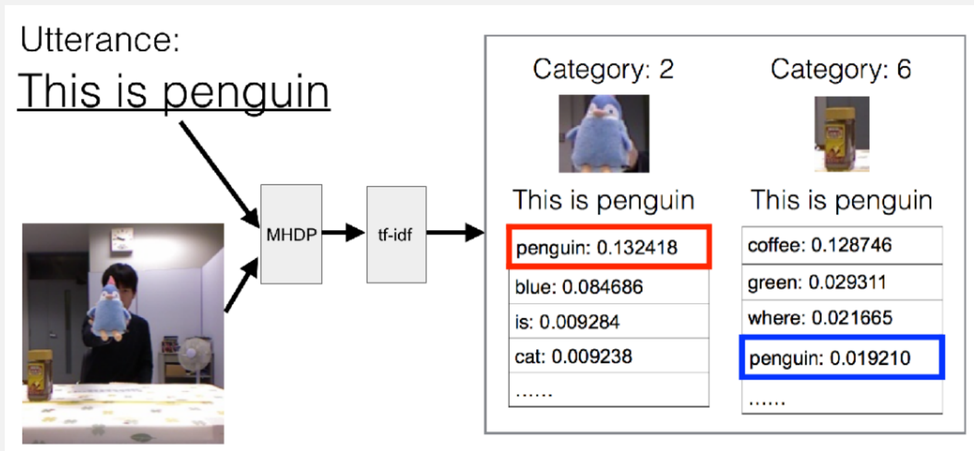
- Some examples of dialogue between human and robot:

Do you know any toys?	I am not familiar with toy.
Here is the stuffed toy.	Oh, I see.
Do you like animals?	I like dogs.
I like this penguin.	I got it.

4. Propose Method



5. Learning Method (MHDP+tf-idf)



6. Experimental Setup

The ten objects used in the experiment are: two black stuffed toy cats (small & big), two stuffed toy fishes (red & yellow), and two cups (red & yellow)

7. Results

Results...

Table 1:Results of learning accuracy of object and words (%)

without loop	31% (61/196)	30% (59/196)	10% (19/196)
with loop	35% (69/196)	57% (112/196)	28% (54/196)

Here,

- P_w: probability of selecting correct word in each sentence
- P_c: probability of selecting object image concept for each sentence
- P_{wc}: probability of selecting both correct word and object image concept for each sentence
- Result: without loop $<$ with loop

Acknowledgments

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References

[1] Ye Kyaw Thu, Takuya Ishida, Naoto Iwahashi, Tomoaki Nakamura, and Takayuki Nagai. Symbol grounding from natural conversation for human-robot communication. In Britta Wrede, Yukie Nagai, Takanori Komatsu, Marc Hanheide, and Lorenzo Natale, editors, *Proceedings of the 5th International Conference on Human Agent Interaction, HAI 2017, Bielefeld, Germany, October 17 - 20, 2017*, pages 415–419. ACM, 2017.

[2] Ye Kyaw Thu, Takuya Ishida, Naoto Iwahashi, Tomoaki Nakamura, and Takayuki Nagai. Original poster for CADT Beamer Poster Template. https://github.com/ye-kyaw-thu/papers/blob/master/HAI2017/hai2017-poster.pdf, 2017. [Online; accessed 28-June-2022].