

Situated Incremental Natural Language Understanding in Dialogue with Markov Logic Networks

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I present work comprising the first year of my Ph.D studies (supervised by David Schlangen) on understanding natural language in a situated domain, that is, language that possibly refers to visually present entities, in an incremental, word-by-word fashion. Such type of understanding is required in conversational systems that need to act immediately on language input, such as multi-modal systems or dialogue systems for robots. I will talk about Markov Logic Networks, the machine learning approach in our experiments, with examples. I will then explain how we used Markov Logic Networks to perform experiments in a natural language understanding task that used information from four sources: discourse context of an utterance, words of an utterance, linguistic representation of the utterance, and the shared visual world. Some analysis of the results and model will also be presented.