Where to next?
Situated Dialogue with Robots for Search and Navigation

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Abstract

Hey Robot, can you take a picture of the brown object behind you?

This instruction exemplifies several of the challenges we are faced with in developing a human-robot dialogue system in the search and navigation domain—How does the robot know whether this is a question of ability or a command? What implicit sub-actions (such as turning around) might the robot have to take in order to fulfill this instruction? How can the robot ground the unconstrained or under-specified language ("brown object") to its surrounding environment? We describe our research efforts, beginning with how to collect human-robot dialogue data when lacking technology that supports such two-way dialogue. We provide an overview of two types of annotation devised and applied to this data: one that captures the dialogue structure, or the relationship between two utterances, and one that captures both the illocutionary force and the propositional content. We will demo our existing system and highlight ongoing challenges, including grounding the language in the physical environment.