

# Enabling a Humanoid Robot to Interact with Multiple Persons

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## Abstract

*Showing attentiveness to people is an essential capability for a robot designed to interact with humans. Involving several persons into an interaction requires that the robot knows where the persons are relatively to its current location. Therefore, we propose an approach that maintains a probabilistic belief about people in the surroundings of the robot which is updated based on sensory information. Using this belief the robot is able to memorize people even if they are currently outside its limited field of view. Furthermore, we use a technique to localize a speaker in the environment. In this way, even people who are currently not stored in the belief of the robot can attract its attention. As we show in practical experiments, our humanoid robot is able to shift its attention between different persons. Even people who are not the primary conversational partner are included into the interaction.*