

Computational Models of Multimodal Referring Expressions in the ELDERLY-AT-HOME Corpus

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The goal of the ROBOHELPER project is to design and develop robotic assistants that can help the elderly live independently. To understand and model how humans would communicate with an assistive robot, we collected human-human interactions between an elderly subject and a human helper. One novel aspect of the multimodal referring expressions we analyzed is the role played by "haptic-ostensive" actions, namely, gestures that involve manipulating an object, and that can at the same time refer ("haptic" refers to the sense of touch). These haptic gestures are part of the pronominal and deictic reference resolution models we developed. Our results show that the presence of simultaneous gestures improves co-reference resolution for personal and deictic pronouns. If time permits, I will also illustrate how haptic information affects models of speech acts that speakers are performing.