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Study of visual assist effect to vertical plane hand movement during human-human cooperative task

Abstract

At present the majority of autonomous robots are mostly used in factories where speed and accuracy are given highest priority. In our research, we are focusing in the area where the robot that cooperate with human to lift or carry a human subject. In this area the robots are required to interact with human and move in such a fashion where it will move with human-like motion so that the human subject that is being move will not feel intimidated. In order to design robot that have smooth human like motion capability during human robot interaction in cooperative task, we need to understand how human-human understand each other, how and what kind of information are exchange between them that enable human-human to be able to accomplish to move object with smooth qualities. Based on this, we need to design a system that is available to be used not only by robotic experts but by general population so that anybody can use this system for their care giving purpose. In this paper we conduct a study of how human-human utilize their sense in moving and stopping an object and we analyzed the smoothness of the motion by analyzing the hand jerk characteristic during the said task.

Keywords — Follower, human, human-human cooperation, human-robot interaction, leader, robot