

システム情報工学研究科修士論文概要

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論文題目 Gaming Humanoid: A Robotic Video Game Player for Encouraging Playful Interaction (ゲームを介在してインタラクションの促進を支援する人間型ロボット)			
論文概要 <p>This thesis proposes “Gaming Humanoid” which is a novel approach for Human-Robot Interaction (HRI) using a humanoid robot in a real video game environment. Currently, the video game is regarded as one of the biggest social communication tools among people. Focusing on this assumption, we have built up the hypothesis that the embodied robot capable of playing video games together with humans has the potential to be an effective interaction platform while providing a playful experience. Gaming humanoid can play a video game in an autonomous manner using image processing and is also capable of providing behaviors for emotional and encouragement by a remote control (WoZ framework). Furthermore, the robot can control its game play performance with the implemented skill level control. In the real gaming environment the robot plays a video game with people and relieved its feasibility in two types game conditions: a musical video game and a typical tennis video game. The performance evaluation showed that the robot was able to play video games in a similar manner to how humans play and it is not inferior to the average person. Above all, the experiments with children indicated its potential for encouraging playful interaction.</p> <p>The novel gaming humanoid system for playing video games in a real environment is developed and verified throughout several experiments based on collaborative and competitive games. This could offer a potential use as a novel medium not only as an entertainment platform but also as a therapeutic tool to facilitate interaction among humans. The achievement contributes to the technology for social robotics, which reveals new aspects of human behaviors in a human-humanoid interaction.</p>			
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