Robust Action Selection by the Robot in Human-Robot Interaction (HRI) Environment

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 155
Number 7

Year of Publication: 2016

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10.5120/ijca2016912359

Abstract

With the evolution in the auspicious field of Human Robot Interaction it is crucial to work for the Robust Action Selection on a robot’s end especially when the human exhibits an unknown behaviour. A particular human action may lead to more than one human behaviour(s) and when it comes to a robot as an assistant or a co-worker it is of vital concern to have some efficient method to select a suitable action performed by the robot in response. After exploring multiple techniques a novel method is suggested using RL based approach to cater the need of robust action selection with addition of domain knowledge. Experimentation is performed using hardware equipment including 4DOF Robotic Arm equipped with the Arduino Kit and 480x640 Camera. Very promising results have been found and future direction is discovered.

References


Index Terms

Computer Science  Artificial Intelligence

Keywords

Robotics, Human Robot Interaction, Service Robots, Reinforcement Learning