

Ergonomic Control of Human-Robot Coexistence and Collaboration

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(Workshop Presentation)

Abstract

The talk will present a control approach to human-robot co-manipulation that accounts for human ergonomics and related fatigues. We will first present a human monitoring method that includes a overloading joint torque estimation technique, as well as the feedback methods to provide a guidance to human. The robot by means the mobile manipulator platform MObile Collaborative robotic Assistant (MOCA) then uses the lower level control framework in conjunction with the proposed higher level methods that can anticipate human ergonomic states. The robot then uses the proposed methods to control its own behaviour in a way that offloads the excessive effort of the human and ensures ergonomic working conditions, as well as the coexistence in the workplace.