

Human-Robot Collaboration: From Low-Level Learning to High-Level Planning

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(Workshop Presentation)

Abstract

In this talk I first present our work on using machine learning to “compile” complex biomechanical simulations into compact models which can be quickly queried. These models are used to optimize robotic behavior with respect to relevant musculo-skeletal variables of humans that physically interact with the robot. In our current work, we are applying this approach to compensating for the so called “limb position effect” in prosthetic control. Finally, I will provide an outlook on using high-level planning to automatically distribute tasks between robots and humans, which aim at factory-wide optimization, rather than the behavior of individual robots.