

October 18, 2007

Machine Learning for Hand Prosthetics (and more)

Claudio Castellini, Ph.D.

Università degli Studi di Genova

ABSTRACT OF THE TALK

Currently, the dexterity of active hand prosthetics is hindered due to limitations in interfaces.

How is an amputee supposed to command the prosthesis what to do (i.e., how to grasp an object) and with what force (i.e., holding a hammer or grasping an egg)?

In this talk I address the issue by applying machine learning to the problem of regression from surface forearm EMG to the force a subject is applying. A detailed comparative analysis among three different machine learning approaches reveals that the approach, as a whole, is viable.

More applications of machine learning to grasping and reaching will be shown, among which prediction of grasping postures and of the user's intention to grasp.