G. METTA. TOWARDS ADDRESSING LARGE SCALE REGRESSION PROBLEMS USING A STREAMING APPROXIMATE SVM. WORKSHOP ON APPROACHES TO SENSORIMOTOR LEARNING ON HUMANOID ROBOTS. ICRA 2009 KOBE, JAPAN. MAY 12-17, 2009.

Abstract

We report about an attempt of dealing with large-scale regression problems in the domain of humanoid robotics. In particular, we focus on algorithms that have a low computational cost and that can potentially run for the entire life time of the robot managing millions of samples (discarding them if not needed). We start by investigating the use of streaming approximations to Support Vector Regression and use the estimation of the robot's dynamics as test-bed (which can be compared to several existing results). Our experimental setup is the iCub, a 53 degree of freedom humanoid robot equipped with force/torque sensors.