

Learning Perceptual ProMP's for Catching Ball's

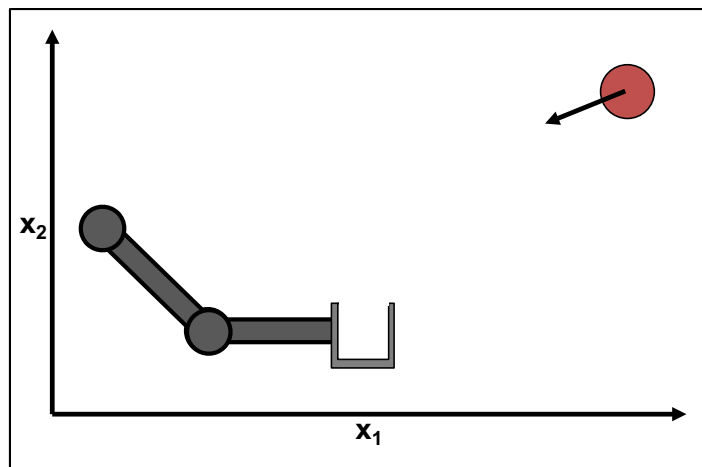
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Integrated Project WS17/18



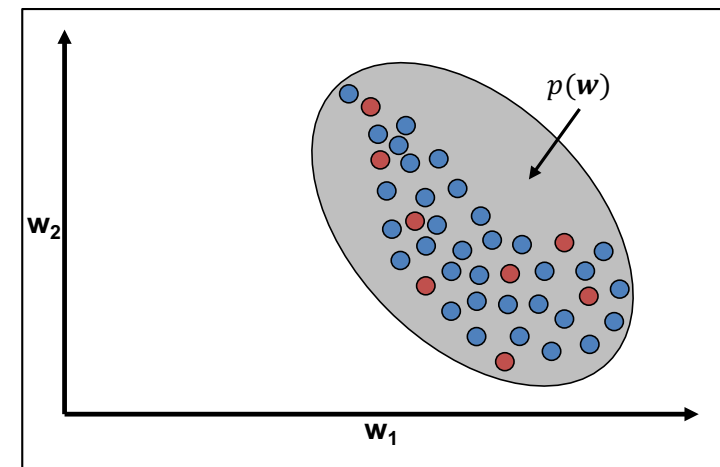
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Learning perceptual ProMP's to catch balls with different physical properties



$$\pi(\tau \mid p(w \mid \phi, s))$$
$$\theta_i = \{ \mathbf{w}_i, \mathbf{s}_i, r_i \}$$



- i-th Demonstration $\theta_i = \{ \mathbf{w}_i, \mathbf{s}_i, r_i \}$
● j-th Trial $\theta_j = \{ \mathbf{w}_i, \mathbf{s}_i, r_i \}$

Project Plan

Part 1: Learn Conditional PDF

Problem Statement:

$$\phi = \operatorname{argmax}_{\phi'} \mathbf{E}_{p(w|\phi',s)} \{ J(\pi(\tau|w)) \}$$

Parametrizations:

- Parametric Regression
- Non-parametric Regression

Learning Algorithms:

- Supervised Learning from Demonstrations
- Reinforcement Learning

Part 2: Make it work on Barrett

