TOR VERGATA
UNIVERSITÀ DEGLI STUDI DI ROMA

Dipartimento di Fisica

erc

European Research Council
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A mini-course on decision-making and active learning

Machine Learning has come of age and is found everywhere, in applications and basic sciences alike. While its practical successes are spectacular, understanding reasons (including for failure) are harder to cope with. It is therefore important to have a clear view of the fundamentals of the field to grasp its foundations and basic aspects. The scope of this mini-course is to provide such an introduction by stressing aspects related to active learning and decision-making before going to reinforcement learning. Examples from life sciences will illustrate various aspects of the problems.

Lecture 1

Tuesday, 21 May 2024 - h. 14:30

Aula Grassano (Department of Physics)

Prof. Massimo VERGASSOLA

Ecole Normale Supérieure, Paris

"Active learning: definition and examples"

Abstract

I shall provide examples of active learning, namely the identification of a boundary and the query-by-committee method and policies for effective actions in problems of multi-armed bandits. These are classic examples of decision-making in the presence of uncertainty with applications that run from experimental planning, economy, human behavior, and ethology.