## The Game-Theoretic Approach to Machine Learning and Adaptation

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The design of artificial systems able to learn and adapt has been one of the main goals of Artificial Intelligence since its very beginning. To this end, statistical modeling has proven to be a tool of extraordinary effectiveness. In some cases, however, statistics is not the most adequate language for analyzing the interaction between a learning agent and an ever-changing environment. Indeed, a research thread, emerged in parallel with statistical learning, views this interaction as a repeated game between agent and environment. This different approach allows to analyze, in a rigorous framework, predictive models without any statistical assumptions. In this talk we will trace the roots of the game-theoretic approach in learning theory and describe some of the key results.