Online Learning for Modern Business Models: Theoretical Considerations and Algorithms

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Abstract : This scientific communication reports and discusses learning models adaptable to modern business problems and models specific to digital concepts and paradigms. In the PAC (probably approximately correct) learning model approach, in which the learning process begins by receiving a batch of learning examples, the set of learning processes is used to acquire a hypothesis, and when the learning process is fully used, this hypothesis is used in the prediction of new operational examples. For complex business models, a lot of models should be introduced and evaluated to estimate the induced results so that the totality of the results are used to develop a predictive rule, which anticipates the choice of new models. In opposition, for online learning-type processes, there is no separation between the learning (training) and predictive phase. Every time a business model is approached, a test example is considered from the beginning until the prediction of the appearance of a model considered correct from the point of view of the business decision. After choosing choice a part of the business model, the label with the logical value "true" is known. Some of the business models are used as examples of learning (training), which helps to improve the prediction mechanisms for future business models.

Keywords : machine learning, business models, convex analysis, online learning

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