

**Abstract:** In the talk I will describe a theoretical framework for analyzing learning algorithms which is called online learning. Online learning concerns algorithms which make repeated predictions based on the data appearing in a sequential order. The algorithms receive immediate feedback about each prediction and use this feedback to improve their accuracy on subsequent predictions. The framework makes no assumptions regarding the origin of the sequence of the data: the sequence is allowed to be deterministic, stochastic, or even adversarially generated by an opponent, while it is still possible to give meaningful guarantees on the algorithm's performance. In the second part of the talk I will present some results on the adaptive online algorithms.