



Workshop 2019
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Title: « The Many Faces of Exponential Weights in Online Learning »

Abstract:

Online machine learning algorithms process data sequentially, either because the data are inherently sequential or because the whole data set is too large to load into memory all at once (e.g. when training neural networks). I will provide a unified introduction to many online learning algorithms, by showing how they may all be viewed as special cases of a single method called exponential weights. This includes several venerable methods like online gradient descent, online mirror descent and online Newton step, as well as the recent Squint method for adaptive prediction with expert advice and the exponential weights method of Bubeck and Eldan for bandit linear optimization.

References: * D. van der Hoeven, T. van Erven and W. Kotłowski, "The Many Faces of Exponential Weights in Online Learning", Conference on Learning Theory, 2018.