

Light cones and supervised learning prediction tasks

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Abstract

Analyzing spatio-temporal data sets is essential in various domains, including Earth-science, environmental monitoring and physics. However, space and time introduce a rich diversity in the possible data sets to use in prediction tasks. We analyze in this talk the special case of data observed on regular spatial lattices across time (*frames*), each composed of a fixed amount of elements (*pixels*). We explain in this talk how to use light cones and mixed moving average fields to model the serial correlation typically observed between different pixels in distinct time points. This analysis will enable us to define inference methodologies and to define a linear regression task (with an absolute loss) to make predictions in new pixel positions by using a PAC Bayesian framework.