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AI and ML in Astronomy

Wednesday, 4 November 2020 11:15 (20 minutes)

The expected volume of data from the new generation of scientific facilities such as the Square Kilometre Array (SKA) has motivated the expanded use of semi-automatic and automatic machine learning algorithms for scientific discovery in astronomy. In this field, the robust and systematic use of machine learning faces a number of specific challenges including (1) a paucity of labelled data for training - paradoxically, although we have too much data, we don't have enough; (2) a clear understanding of the effect of biases introduced due to observational and intrinsic astrophysical selection effects in the training data, and (3) the quantitative statistical representation of outcomes from decisive AI applications that can be used in scientific analysis. I will discuss a range of AI applications currently in use and under development in astronomy, highlighting the practical aspects of these applications from a computational perspective and looking to the future.

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Session Classification: AI and Machine Learning experiences