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Machine Learning in the Era of Data Intensive Astronomy

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The construction of MeerKAT and emergence of the African VLBI network marks the beginning of the radio astronomy big data revolution in South Africa, and the first steps of the scientific and data pathway to the Square Kilometre Array (SKA). This journey to the SKA represents one of the most significant data challenges in scientific research of the coming decade. To rise to the scientific opportunity of this new data era requires the research community to develop new infrastructure, software systems and algorithm to process, analyse and mine these data for scientific knowledge. But the size of the data, the complexity of the signals contained therein, and the sophistication of the analytics needed, means we cannot rely on the old approaches for human interaction with the data. Machine learning techniques may be an important part of the solution. I will review the data-to-science landscape of the SKA, and touch on specific challenges where algorithmic approaches are falling short but machine learning may offer a way forward.

HPC content

Contained in Abstract

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