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## Artificial Intelligence as a Core Component of the Cosmology Research

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A unique aspect of the next-generation astronomical surveys as a probe of dark energy and dark matter is in the use of multiple cross-checking probes observed with unprecedented precision. Due to the dataset complexity and size, working with the next-generation astronomical datasets will be challenging, and many tasks will either be too slow or not possible at all with classical approaches. Artificial Intelligence (AI) methods have already shown huge promise in increasing the quality and speed of work with big data from cosmological surveys - from finding, classifying and inferring properties of astrophysical objects, to constraining cosmological parameters and learning about dark matter and dark energy. The development of more advanced, robust, physics-aware AI algorithms, capable of combining knowledge from complex simulations and big astronomical surveys should be considered a core component of the future cosmology and astrophysics research.

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