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New ML-based analysis techniques in fundamental physics

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Traditional analysis techniques in data-intensive disciplines like high energy physics and cosmology have been restricted to hand-crafted low dimensional summary statistics. Modern machine learning allows for new methods that attempt to make optimal use of the full high-dimensional data. However the significant computational cost of these methods requires the use of dedicated GPU clusters, especially when taking into account the expected increase in data collection in future experiments like HL-LHC and SKA. In this talk I will introduce some new ML-based analysis techniques from fundamental physics. I will highlight their advantages over traditional methods and discuss the computational bottlenecks.

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