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The field of collider particle physics is in the midst of a data deluge, with the Large Hadron Collider (LHC) providing petabytes of data annually and even greater amounts to come in the future High Luminosity LHC. Analysing this vast and complex dataset to search for new particles and understand fundamental interactions is a monumental challenge. This talk will explore how machine learning (ML) serves as a powerful tool to meet this challenge and is core to our approach to data analysis. We will look at some examples of how ML is deployed in particle physics as well as some ways in which you can get hands on with the data yourselves.s