

Recognising particles with Machine Learning



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Particle Physics used to be on the forefront of using Machine Learning (ML), but with the current “ML revolution” it is a hard position to defend. However, the data produced in HEP experiments - not the least LHC - are still among the largest, most complex, yet also most ordered and uniform data sets. And uniquely we have associated simulated data from first principles.

In order to get the most out of this data, and also to prepare ourselves for more noisy data with High-Luminosity LHC, ML in some cases offers to pinch the last (typically non-linearly correlated) available information out of the data, optimising the particle physics that can be done with our hard-won (Peta-)bytes.

Using examples from different experiments - ranging back in time and reaching for the future - I will informally go through examples of the use of ML, most notably electron and photon identification and energy reconstruction in ATLAS.

When: Wednesday 27th March
Time: 2pm
Where: Level 1, Seminar Room 107,
10 College Walk, Clayton

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