

Jet tagging with neural networks

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The LHC has yet to achieve a discovery more exciting than the Higgs boson in 2012, but the collaboration has not given up hope of one. In the quest to observe physics Beyond the Standard Model (BSM) we probe higher luminosities, and employ new techniques to access previously elusive areas of phase space. One aspect of the phenomenology that is under active development is the identification of quark flavour from jets, known as jet tagging. A jet is a shot-gun like spray of particles caused by the hadronisation of a quark. If jet tagging was more robust for collimated jets, that is jets that overlap due to their low angle, it would be a boon to many searches.

This challenge is approached using machine learning techniques, in particular deep neural networks.

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