

Jet flavor tagging with Deep Learning using Python

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Object tagging, e.g. jet flavor tagging is seen as a classification problem from a Machine Learning point of view. Deep neural networks with multidimensional output provide one way of approaching this problem. Besides the part that implements the resulting deep neural net in the ATLAS C++ software framework, a Python framework has been developed to connect HEP data to standard Data Science Python based libraries for Machine Learning. It makes use of HDF5, JSON and Pickle as intermediate data storage format, pandas and numpy for data handling and calculations, Keras for neural net construction and training as well as testing and matplotlib for plotting. It can be seen as an example of taking advantage of outside-HEP software developments without relying on the HEP standard ROOT.

Talk Length

15 minutes

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