

An updated hybrid deep learning algorithm for identifying and locating primary vertices

Discussion session

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on behalf of the LHCb Real Time Analysis project

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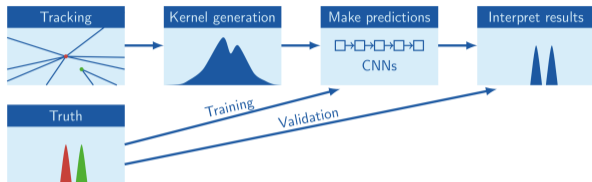


April, 28th 2020

Supported by:



- A hybrid deep learning approach to vertex finding has been introduced
 - Cluster search done by CNN with custom cost function
 - Plan to develop ML algorithm for KDE generation as well



- Improved performance, driven by CNN architecture
- Privately deployed as PV finding algorithm in CPU version of LHCb's HLT
 - More pronounced kernels using measured track covariance
 - Next: Train & benchmark with LHCb simulation & software

(Open) Source code of standalone package, including toy generation:

- <https://gitlab.cern.ch/LHCb-Reco-Dev/pv-finder>
- Runnable with Conda on macOS and Linux

