

Nanosecond machine learning event classification with boosted decision trees in FPGA for high energy physics

Saturday 4 December 2021 12:15 (15 minutes)

A novel implementation of boosted decision trees on FPGA is presented as a case study for use in a real-time trigger system at the LHC and HL-LHC. An example case of vector boson fusion production of the Higgs boson followed by its hypothetical decay into invisible or soft final states is considered. Comparison of hardware performance is made with respect to hls4ml's boosted decision trees as well as to hls4ml's neural network.

<https://arxiv.org/abs/2104.03408>

Author: HONG, Tae Min (University of Pittsburgh (US))

Presenter: HONG, Tae Min (University of Pittsburgh (US))