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Machine Learning at 40 MHz with hls4ml

The hls4ml project started to bring Neural Network inference to the L1 trigger system of the LHC experiments. Since its initial proposal, the library has grown, integrating support for multiple backends, multiple network architectures (convolutional, recurrent, graph), extreme quantization (binary and ternary networks), and multiple applications (classification, regression, anomaly detection). Thanks to a collaboration with Google, it was interfaced to QKeras to enhance network compression capabilities through quantization aware training. In this talk we review the status of the project and its new features and its possible applications for LHC Run III and High-Luminosity LHC.

Significance

References

Speaker time zone

No preference

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