

mPP: machine learning for Particle Physics

mPP is a CERN R&D project to investigate and promote applications of modern machine learning to particle physics. The project focuses on developing and deploying Machine Learning solutions for CERN experiments, such as trigger, event reconstruction, simulation, etc. The project is supported by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (grant agreement N. 772369).

Ongoing projects:

HLS4ML

development of a library to convert machine learning models into firmware blocks of FPGAs.

mPP tutorials:

mPP organizes open-for-all tutorials on various ML topics. The full list of past and future events can be found at <https://indico.cern.ch/category/10066/>.

Tensorflow 2.0 basics: Introduction to Tensorflow 2.0. Indico: <https://indico.cern.ch/e/mpp-tutorials-tf2/> - Google

Spiking Neural Networks: Spiking NNs for ultra-low-power, low-latency ML applications. Inference on neuromorphic chips - aiCTX

TensorFlow Developer Summit: Latest TF2 developments, hands-on workshop/TF feedback, TensorFlow Research Cloud/TPU - Google

hls4ml workshop: hls4ml - Real time inference on FPGAs (part of IML workshop) - CERN

Quantum Machine Learning: How quantum computers can be used for data-driven prediction and decision making - Maria Schuld <https://indico.cern.ch/e/qml/>

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