

Session Program

23-27 Sept 2024



SMARThEP Edge Machine Learning School

Tutorial

CERN, 222/R-001

Monday 23 September

14:30

Tutorial: GPUs

Session | **Location:** CERN, 500/1-001 - Main Auditorium | **Convener:** Thea Aarrestad

16:00

14:30-16:00

Tutorial on network optimization for GPUs

Speaker

NVIDIA team

Location

Tuesday 24 September

13:45

Tutorial: FPGAs

Session | **Location:** CERN, 500/1-001 - Main Auditorium | **Convener:** Anna Sfyrla

13:45–14:15 **QONNX**

Speakers

AMD/XILINX team, Marius Köppel

Location

14:15–14:30 **Discussion**

Location

14:30–15:15 **Tutorial: Working with QONNX**

Speaker

Marius Köppel

Location

15:15–16:00 **Tutorial: Training a fully heterogeneously quantized NN with HGQ**

Speaker

Chang Sun

Location

16:00

16:30

Tutorial: fwXmachina

Session | **Location:** CERN, 500/1-001 - Main Auditorium | **Convener:** Tae Min Hong

16:30–17:00 **Introduction to fwX**

Speaker

Tae Min Hong

17:00–18:00 **Tutorial**

Speakers

Ben Carlson, Elangovan Yuvaraj, Isabelle Eleonore Taylor, Joerg Stelzer, Pavel Serhiayenka, Rajat Gupta, Santiago Cane, Tae Min Hong

Subcontributions

Using the egamma example we train a BDT and generate the fwX BDT description

Speaker

Rajat Gupta

VHDL Synthesis

Speaker

Isabelle Eleonore Taylor

FPGA application: running the testbench and checking the output signals

Speaker

Pavel Serhiayenka

18:00

Wednesday 25 September

09:30

Tutorial: FPGAs

Session | **Location:** CERN, 222/R-001 | **Convener:** Sioni Paris Summers

09:30–11:15

Training a quantized/pruned NN with QKeras/Tensorflow and deployment with hls4ml (via QONNX)[hls4ml team]

Speakers

Benjamin Ramhorst, Benjamin Ramhorst

Location

11:15

15:30

Tutorial: Neuromorphic computing

Session | **Location:** CERN, 222/R-001 | **Convener:** Dr Jean-Roch Vlimant

15:30–17:00

Tutorial on neuromorphic computing

Speaker

IBM Research

17:00

Thursday 26 September

09:00

Tutorial: FPGAs

Session | **Location:** CERN, 222/R-001 | **Convener:** Martino Borsato

09:00–09:45

Decision Forests on FPGAs with conifer

Speaker

Sioni Paris Summers

Location

09:45–10:00

Discussion

Location

CERN, 222/R-001

10:00