

**PUNCH4NFDI TA5 - XFEL  
Joint Workshop on Machine  
Learning and Data Processing  
on FPGAs**

**Report of Contributions**

Contribution ID: 2

Type: **not specified**

# Overview of FPGA applications in TA5 Astrophysics

*Thursday 15 June 2023 14:05 (20 minutes)*

**Presenter:** KARUPPUSAMY, Ramesh

**Session Classification:** Introduction Session

Contribution ID: 3

Type: **not specified**

# Overview of FPGA applications in TA5 Particle Physics

*Thursday 15 June 2023 14:35 (20 minutes)*

**Presenter:** STRAESSNER, Arno (TU Dresden)

**Session Classification:** Introduction Session

Contribution ID: 4

Type: **not specified**

## Overview of FPGA applications at XFEL

*Thursday 15 June 2023 15:05 (20 minutes)*

**Presenters:** FERNANDES, Bruno (Eur.XFEL (European XFEL)); HABIBULLAH, Haris (Eur.XFEL (European XFEL))

**Session Classification:** Introduction Session

Contribution ID: 5

Type: **not specified**

## Dinner

*Thursday 15 June 2023 19:00 (1 hour)*

Contribution ID: 6

Type: **not specified**

## Beginning of the Workshop and Welcome

*Thursday 15 June 2023 14:00 (5 minutes)*

Contribution ID: 7

Type: **not specified**

## **Deep Learning for Real-Time Classification of Astronomical Radio Signals**

*Thursday 15 June 2023 16:00 (15 minutes)*

**Presenter:** KAZANTSEV, Andrei (MPIfR)

**Session Classification:** Workshop Session

Contribution ID: 8

Type: **not specified**

## Versal AI Engines and Programming in Vitis

*Thursday 15 June 2023 16:20 (15 minutes)*

**Presenter:** LAYH, Dennis (Johannes Gutenberg University)

**Session Classification:** Workshop Session



Contribution ID: 9

Type: **not specified**

## **Machine Learning Platforms for FPGAs and their Application (Vitis AI)**

*Thursday 15 June 2023 16:45 (20 minutes)*

**Presenter:** HABIBULLAH, Haris (Eur.XFEL (European XFEL))

**Session Classification:** Workshop Session

Contribution ID: **10**

Type: **not specified**

# Characterizing Heavy-Ion Collision Data by Deep Learning Methods

*Thursday 15 June 2023 17:15 (15 minutes)*

**Presenter:** REDELBACH, Andreas (Frankfurt Institute for Advanced Studies)

**Session Classification:** Workshop Session

Contribution ID: **11**

Type: **not specified**

## Anomaly Detection

*Thursday 15 June 2023 17:35 (20 minutes)*

**Presenter:** HALLIN, Anna (UNI/EXP (Uni Hamburg, Institut für Experimentalphysik))

**Session Classification:** Workshop Session

Contribution ID: 12

Type: **not specified**

## Application of hls4ml for the CMS Trigger

*Friday 16 June 2023 09:00 (20 minutes)*

**Presenter:** LOBANOV, Artur (Universität Hamburg)

**Session Classification:** Workshop Session

Contribution ID: 13

Type: **not specified**

## Converting TensorFlow Models for Classification of Radioastronomical Signals to HLS using hls4ml

*Friday 16 June 2023 09:30 (20 minutes)*

**Presenter:** MEN, Yunpeng (MPIfR)

**Session Classification:** Workshop Session

Contribution ID: 14

Type: **not specified**

# Machine Learning on FPGAs for the ATLAS Liquid Argon Calorimeter

*Friday 16 June 2023 10:00 (15 minutes)*

**Presenter:** VOIGT, Johann Christoph

**Session Classification:** Workshop Session

Contribution ID: 15

Type: **not specified**

## **Bitwise Optimisation of Artificial Neural Networks for Application in FPGAs**

*Friday 16 June 2023 11:00 (15 minutes)*

**Presenter:** LETTAU, Alexander (TU Dresden)

**Session Classification:** Workshop Session: Tools and Collaboration

Contribution ID: 16

Type: **not specified**

## **FPGA Firmware and Tools as a PUNCH and NFDI Service, Connections to ErUM-Data, DAPHNE, ...**

*Friday 16 June 2023 11:20 (10 minutes)*

**Presenters:** STRAESSNER, Arno (TU Dresden); VOIGT, Johann Christoph

**Session Classification:** Workshop Session: Tools and Collaboration



Contribution ID: 17

Type: **not specified**

## Discussion: Synergies and Frameworks

*Friday 16 June 2023 11:40 (30 minutes)*

Data Sets, Firmware Tools, ML Tools, Tutorials...

**Session Classification:** Workshop Session: Tools and Collaboration