

CERN openlab Technical Workshop

Report of Contributions

Contribution ID: 1

Type: **not specified**

Welcome and workshop goals

Tuesday, 9 March 2021 14:30 (10 minutes)

Presenter: GIRONE, Maria (CERN)

Contribution ID: 2

Type: **not specified**

Using oneAPI in ATLAS

Tuesday, 9 March 2021 14:40 (10 minutes)

Presenter: KRASZNAHORKAY, Attila (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 3

Type: **not specified**

OneAPI for simulation: the AdePT project

Tuesday, 9 March 2021 14:50 (10 minutes)

Presenter: DOSARU, Daniel-Florin

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 4

Type: **not specified**

DAOS: Nextgen Storage Stack for AI, Big Data and Exascale HPC

Tuesday, 9 March 2021 15:05 (25 minutes)

Johann Lombardi is a senior principal engineer in the Cloud & Enterprise Solution Group (CESG) at Intel. He started to work on Lustre in 2003 and led the sustaining team in charge of the Lustre file system worldwide support for more than 5 years. He then transitioned to research programs (Fast Forward, ESSIO, CORAL & Path Forward) to lead the development of a storage stack for Exascale HPC, Big Data and AI called DAOS.

Presenter: LOMBARDI, Johann (Intel)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 5

Type: **not specified**

High Performance distributed storage solutions in ATLAS (TBC)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 6

Type: **not specified**

Exploring DAOS for HEP Data with ROOT RNTuple

Tuesday, 9 March 2021 15:30 (10 minutes)

Presenter: BLOMER, Jakob (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 7

Type: **not specified**

The Patatrack project

Tuesday, 9 March 2021 15:55 (10 minutes)

Presenters: BOCCI, Andrea; PANTALEO, Felice (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 8

Type: **not specified**

The Allen project

Tuesday, 9 March 2021 16:05 (10 minutes)

Presenter: AAIJ, Roel (Nikhef National institute for subatomic physics (NL))

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 9

Type: **not specified**

Towards a Modular SuperComputer Architecture at Exascale: DEEP-EST project

Tuesday, 9 March 2021 16:15 (10 minutes)

Presenter: KHRISTENKO, Viktor (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: **10**

Type: **not specified**

Benchmarking in HPC

Tuesday, 9 March 2021 16:25 (10 minutes)

Presenter: SOUTHWICK, David (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 11

Type: **not specified**

Deep learning for the CMS experiment using the Micron DLA

Tuesday, 9 March 2021 16:45 (10 minutes)

Presenter: JAMES, Thomas Owen (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 12

Type: **not specified**

Using deep learning techniques on hardware accelerators for particle identification studies in ProtoDUNE

Tuesday, 9 March 2021 16:55 (10 minutes)

Presenter: RODRIGUEZ, Manuel (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 13

Type: **not specified**

Micron Deep Learning Accelerator, tools and applications

Tuesday, 9 March 2021 17:05 (25 minutes)

We present Micron Inc. Deep Learning Accelerator (DLA), its software development kits, compiler and applications.

We introduce current and future DLA versions, and plans for additional software tools and support.

We also present a summary of current Micron collaboration and DLA-based activities with CERN.

Presenters: WERRAN, Dustin (Micron); CULURCIELLO, Eugenio (Micron)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 14

Type: **not specified**

Planet-Scale database and Blockchain for the masses (Talk by Oracle)

Tuesday, 9 March 2021 18:30 (25 minutes)

Presenter: HU, Wei (Oracle)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 15

Type: **not specified**

CERN openlab projects with Oracle

Tuesday, 9 March 2021 18:05 (25 minutes)

Presenters: CASTELLOTTI, Riccardo (CERN); KOZLOVSZKY, Viktor (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 16

Type: **not specified**

EOS Productisation

Tuesday, 9 March 2021 17:55 (10 minutes)

Presenters: LUCHETTI, Fabio (CERN); MASCETTI, Luca (CERN)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 17

Type: **not specified**

Deep Learning based reconstruction for Dune

Wednesday, 10 March 2021 15:00 (15 minutes)

Presenter: ROSSI, Marco (CERN)

Session Classification: AI applications

Contribution ID: **18**

Type: **not specified**

Low precision inference (Intel)

Wednesday, 10 March 2021 15:15 (15 minutes)

Presenter: REHM, Florian (Hochschule Coburg (DE))

Session Classification: AI applications

Contribution ID: **19**

Type: **not specified**

Deep Learning deployment on TPUs

Wednesday, 10 March 2021 15:30 (15 minutes)

Presenter: DA COSTA CARDOSO, Renato Paulo (Universidade de Lisboa (PT))

Session Classification: AI applications

Contribution ID: 20

Type: **not specified**

Kubernetes and Google Cloud

Wednesday, 10 March 2021 15:45 (15 minutes)

Presenter: BRITO DA ROCHA, Ricardo (CERN)

Session Classification: AI applications

Contribution ID: 21

Type: **not specified**

CERN openlab projects with Siemens

Wednesday, 10 March 2021 16:10 (15 minutes)

1. Data Analytics for Industrial Control Systems
2. An update on the Next Generation Archiver project

Presenters: HENNESSEY, Anthony (CERN); SIROKY, Filip (CERN); KULAGA, Rafal (CERN)

Session Classification: AI applications

Contribution ID: 22

Type: **not specified**

Edge Computing and AI for Industrial Applications

Wednesday, 10 March 2021 16:25 (25 minutes)

Presenter: SCHALL , Daniel (Siemens)

Session Classification: AI applications

Contribution ID: 23

Type: **not specified**

BioDynaMo: Current Status and Future Outlook

Wednesday, 10 March 2021 16:50 (15 minutes)

Presenter: BREITWIESER, Lukas (CERN, ETH Zurich)

Session Classification: Working with other sciences

Contribution ID: 24

Type: **not specified**

Private Deep Learning for Healthcare

Wednesday, 10 March 2021 17:05 (15 minutes)

Presenter: CABRERO HOLGUERAS, Jose (University Carlos III (ES))

Session Classification: Working with other sciences

Contribution ID: 25

Type: **not specified**

CERN Science for open data -CS4OD project

Wednesday, 10 March 2021 17:20 (15 minutes)

Presenter: FERRARI, Anna (Universita & INFN, Milano-Bicocca (IT))

Session Classification: Working with other sciences

Contribution ID: 26

Type: **not specified**

UNOSAT

Wednesday, 10 March 2021 18:05 (15 minutes)

Presenter: NEMNI, Edoardo (unitar (CH))

Session Classification: Working with other sciences

Contribution ID: 27

Type: **not specified**

SmartLinac/Spikefall

Wednesday, 10 March 2021 18:20 (15 minutes)

Presenter: DONON, Yann (Samara National Research University (RU))

Session Classification: Working with other sciences

Contribution ID: 28

Type: **not specified**

AI for Earth Observation (ESA)

Wednesday, 10 March 2021 17:50 (15 minutes)

Presenter: MATHIEU, Pierre Philippe

Session Classification: Working with other sciences

Contribution ID: 29

Type: **not specified**

Quantum GAN

Thursday, 11 March 2021 15:00 (15 minutes)

Presenter: CHANG, Su Yeon (EPFL - Ecole Polytechnique Federale Lausanne (CH))

Session Classification: Quantum technologies

Contribution ID: **30**

Type: **not specified**

Quantum Circuit Optimization for Scientific Applications

Thursday, 11 March 2021 15:45 (15 minutes)

Presenter: TERASHI, Koji (University of Tokyo (JP))

Session Classification: Quantum technologies

Contribution ID: **31**

Type: **not specified**

Quantum Classifiers for Higgs searches

Thursday, 11 March 2021 15:15 (15 minutes)

Presenter: BELIS, Vasileios (ETH Zurich (CH))

Session Classification: Quantum technologies

Contribution ID: 32

Type: **not specified**

Quantum Reinforcement Learning for Beam Steering

Thursday, 11 March 2021 15:30 (15 minutes)

Primary authors: SCHENK, Michael (EPFL - Ecole Polytechnique Federale Lausanne (CH)); KAIN, Verena (CERN)

Presenters: SCHENK, Michael (EPFL - Ecole Polytechnique Federale Lausanne (CH)); KAIN, Verena (CERN)

Session Classification: Quantum technologies

Contribution ID: 33

Type: **not specified**

Quantum GNN and hybrid data embedding for particle tracking

Thursday, 11 March 2021 16:00 (15 minutes)

Primary authors: RIEGER, Carla Sophie; TUYSUZ, Cenk (Middle East Technical University (TR))

Presenters: RIEGER, Carla Sophie; TUYSUZ, Cenk (Middle East Technical University (TR))

Session Classification: Quantum technologies

Contribution ID: **34**

Type: **not specified**

IBM talk

Thursday, 11 March 2021 16:25 (25 minutes)

Session Classification: Quantum technologies

Contribution ID: 35

Type: **not specified**

QC for Earth Observation

Primary author: MATHIEU, Pierre Philippe (ESA)

Presenter: MATHIEU, Pierre Philippe (ESA)

Session Classification: Quantum technologies

Contribution ID: 36

Type: **not specified**

Profiling code on NVIDIA GPUs

Tuesday, 9 March 2021 16:35 (10 minutes)

Presenter: HOEGSTOEYL, Ingvild Brevik (Norwegian University of Science and Technology (NTNU) (NO))

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions

Contribution ID: 37

Type: **not specified**

Q&A

Tuesday, 9 March 2021 17:30 (10 minutes)

Session Classification: Exascale technologies for AI, HPC and advanced storage solutions