

Learning to Discover : Advanced Pattern Recognition



Report of Contributions

Contribution ID: 1

Type: **not specified**

Introduction: Goals & Modes

Monday, 14 October 2019 09:30 (20 minutes)

Presenter: SALZBURGER, Andreas (CERN)

Session Classification: Introduction, Summary

Contribution ID: 2

Type: **not specified**

Institut Pascal: Welcome and Mission Statement from the director

Monday, 14 October 2019 09:50 (20 minutes)

Presenter: ULLMO, Denis (LPTMS)

Session Classification: Introduction, Summary

Contribution ID: 3

Type: **not specified**

Practicalities

Monday, 14 October 2019 10:10 (20 minutes)

Presenter: SOCCARD, Sabrina (Institut Pascal)

Session Classification: Introduction, Summary

Contribution ID: 4

Type: **not specified**

Pattern Recognition in HEP

Monday, 14 October 2019 11:00 (1 hour)

Review and outlook on track reconstruction & pattern recognition in high energy physics

Presenter: ELSING, Markus (CERN)

Session Classification: Scientific Session

Contribution ID: 5

Type: **not specified**

Path operators for thin objects restoration

Monday, 14 October 2019 14:00 (1 hour)

In this talk we will present path operators, which are efficient recursive mathematical morphology connected operators that use paths as structuring elements. These operators are designed to preserve thin objects in images, such as hair, cilia, vessels, oriented textures, etc, which are traditionally very difficult to filter using classical operators in many settings. By combining these filters, we show how we can propose a vesselness operator with significant better performance than the traditional linear operators based on the Hessian (Frangi, Sato, etc) or the structure tensor. We also show recent work on how to use these operators as regularizers in variational frameworks for image restoration, in the context of discrete calculus.

Presenter: Prof. HUGUES, Talbot (CentraleSupélec, Université Paris-Saclay)

Session Classification: Scientific Session

Contribution ID: 6

Type: **not specified**

Summary of the TrackML Challenge

Tuesday, 15 October 2019 09:30 (1 hour)

Presenter: KIEHN, Moritz (Universite de Geneve (CH))

Session Classification: Scientific Session

Contribution ID: 7

Type: **not specified**

Q&A, Discussion

Tuesday, 15 October 2019 10:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 8

Type: **not specified**

Track reconstruction with similarity hashing

Tuesday, 15 October 2019 11:30 (1 hour)

Presenter: AMROUCHE, Sabrina (Université de Geneve (CH))

Session Classification: Scientific Session

Contribution ID: 9

Type: **not specified**

Q&A, Discussion

Tuesday, 15 October 2019 12:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: **10**

Type: **not specified**

Graph networks for track reconstruction

Tuesday, 15 October 2019 14:00 (1 hour)

Presenter: KUNZE, Marcel (Heidelberg University)

Session Classification: Scientific Session

Contribution ID: 11

Type: **not specified**

Q&A, Discussion

Tuesday, 15 October 2019 15:00 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 12

Type: **not specified**

GPU usage in HEP

Wednesday, 16 October 2019 09:30 (1 hour)

Presenter: PANTALEO, Felice (CERN)

Session Classification: Scientific Session

Contribution ID: 13

Type: **not specified**

Q&A, Discussion

Wednesday, 16 October 2019 10:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 14

Type: **not specified**

Variable latency tracking at 30 MHz

Wednesday, 16 October 2019 11:30 (1 hour)

Presenter: GLIGOROV, Vladimir (Centre National de la Recherche Scientifique (FR))

Session Classification: Scientific Session

Contribution ID: 15

Type: **not specified**

Q&A, Discussion

Wednesday, 16 October 2019 12:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 16

Type: **not specified**

Performance vs Portability vs Productivity vs Precision : a trail in the hardware and software jungle.

Wednesday, 16 October 2019 14:00 (1 hour)

Presenter: CHAMONT, David (LAL)

Session Classification: Scientific Session

Contribution ID: 17

Type: **not specified**

Q&A, Discussion

Wednesday, 16 October 2019 15:00 (30 minutes)

Session Classification: Scientific Session

Contribution ID: **18**

Type: **not specified**

Quantum Computing meets HEP

Thursday, 17 October 2019 09:30 (1 hour)

Presenter: LINDER, Lucy

Session Classification: Scientific Session

Contribution ID: **19**

Type: **not specified**

Q&A, Discussion

Thursday, 17 October 2019 10:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 20

Type: **not specified**

Optical random features for large-scale machine learning

Thursday, 17 October 2019 14:00 (45 minutes)

Presenter: DAUDET, Laurent

Session Classification: Scientific Session

Contribution ID: 21

Type: **not specified**

Demo of OPU on ML applications

Thursday, 17 October 2019 14:45 (45 minutes)

Presenter: POLI, Iacopo

Session Classification: Scientific Session

Contribution ID: 22

Type: **not specified**

Event Displays in HEP

Friday, 18 October 2019 09:30 (1 hour)

Presenter: MOYSE, Edward (University of Massachusetts (US))

Session Classification: Scientific Session

Contribution ID: 23

Type: **not specified**

Q&A, Discussion

Friday, 18 October 2019 10:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 24

Type: **not specified**

VR and AR in HEP

Friday, 18 October 2019 11:30 (1 hour)

Presenter: ISENBERG, Tobias (Inria)

Session Classification: Scientific Session

Contribution ID: 25

Type: **not specified**

Q&A, Discussion

Friday, 18 October 2019 12:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 26

Type: **not specified**

HEP.TrkX, Exa.TrkX & beyond

Monday, 21 October 2019 09:45 (1 hour)

Presenter: VLIMANT, Jean-Roch (California Institute of Technology (US))

Session Classification: Scientific Session

Contribution ID: 27

Type: **not specified**

Q&A, Discussion

Monday, 21 October 2019 10:45 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 28

Type: **not specified**

Scattering transform for pattern recognition

Monday, 21 October 2019 11:30 (1 hour)

Presenter: OYALLON, Edouard (Centre de Vision Numérique)

Session Classification: Scientific Session

Contribution ID: 29

Type: **not specified**

Q&A, Discussion

Monday, 21 October 2019 12:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: **30**

Type: **not specified**

ACTS Status & plans

Monday, 21 October 2019 14:00 (1 hour)

Presenter: SALZBURGER, Andreas (CERN)

Session Classification: Scientific Session

Contribution ID: **31**

Type: **not specified**

Q&A, Discussion

Monday, 21 October 2019 15:00 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 32

Type: **not specified**

The Mikado algorithm & beyond

Tuesday, 22 October 2019 09:30 (1 hour)

Presenter: GORBUNOV, Sergey (Johann-Wolfgang-Goethe Univ. (DE))

Session Classification: Scientific Session

Contribution ID: 33

Type: **not specified**

Q&A, Discussion

Tuesday, 22 October 2019 10:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 34

Type: **not specified**

Timing detectors in Phase-2

Tuesday, 22 October 2019 11:15 (30 minutes)

Presenter: ALLAIRE, Corentin (Centre National de la Recherche Scientifique (FR))

Session Classification: Scientific Session

Contribution ID: 35

Type: **not specified**

Timing in propagation and pattern recognition

Tuesday, 22 October 2019 11:45 (30 minutes)

Presenter: KLIMPEL, Fabian (Max-Planck-Institut für Physik (DE))

Session Classification: Scientific Session

Contribution ID: 36

Type: **not specified**

Q&A, Discussion

Tuesday, 22 October 2019 12:15 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 37

Type: **not specified**

Fast indexing based on the latent space representation

Thursday, 24 October 2019 10:30 (1 hour)

Presenter: VOLOSHYNOVSKIY, Slava (Université de Genève)

Session Classification: Scientific Session

Contribution ID: **38**

Type: **not specified**

Q&A, Discussion

Thursday, 24 October 2019 11:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 39

Type: **not specified**

Graph networks for vertex reconstruction

Thursday, 24 October 2019 13:30 (1 hour)

Presenter: SHLOMI, Jonathan (Weizmann Institute of Science (IL))

Session Classification: Scientific Session

Contribution ID: 40

Type: **not specified**

Q&A, Discussion

Thursday, 24 October 2019 14:30 (30 minutes)

Session Classification: Scientific Session

Contribution ID: 41

Type: **not specified**

Running Data Challenges

Wednesday, 23 October 2019 09:30 (1 hour)

Presenter: ROUSSEAU, David (LAL-Orsay, FR)

Session Classification: HEP meets ASTRO

Contribution ID: 42

Type: **not specified**

Q&A, Discussion

Wednesday, 23 October 2019 10:30 (15 minutes)

Session Classification: HEP meets ASTRO

Contribution ID: 43

Type: **not specified**

N-Body simulations and beyond

Wednesday, 23 October 2019 10:45 (45 minutes)

Presenter: KOYAMA, Kazuya (University of Portsmouth)

Session Classification: HEP meets ASTRO

Contribution ID: 44

Type: **not specified**

Q&A, Discussion

Wednesday, 23 October 2019 11:30 (15 minutes)

Session Classification: HEP meets ASTRO

Contribution ID: 45

Type: **not specified**

Metric learning

Wednesday, 23 October 2019 12:00 (1 hour)

Presenter: Prof. HABRARD, Amaury (Université Saint-Étienne)

Session Classification: HEP meets ASTRO

Contribution ID: 46

Type: **not specified**

Q&A, Discussion

Wednesday, 23 October 2019 13:00 (15 minutes)

Session Classification: HEP meets ASTRO

Contribution ID: 47

Type: **not specified**

Deep learning for cosmology

Wednesday, 23 October 2019 14:15 (1 hour)

Presenters: MOLLER, Anais; ANAIS, Moeller

Session Classification: HEP meets ASTRO

Contribution ID: 48

Type: **not specified**

Announcement

Tuesday, 15 October 2019 09:20 (10 minutes)

Presenter: SALZBURGER, Andreas (CERN)

Contribution ID: 49

Type: **not specified**

Introduction to random matrices and tensors, and application to Principal Component Analysis)

Thursday, 17 October 2019 11:30 (45 minutes)

Session Classification: Scientific Session

Contribution ID: 50

Type: **not specified**

Institut Pascal - an introduction

Monday, 21 October 2019 09:30 (15 minutes)

Presenter: BITTOUN, Jacques

Session Classification: Introduction, Summary

Contribution ID: 51

Type: **not specified**

OPU Hands-On

Thursday, 17 October 2019 16:00 (1 hour)

Session Classification: Hands-on session

Contribution ID: 52

Type: **not specified**

ACTS hands-on

Monday, 21 October 2019 16:00 (1 hour)

Presenter: SALZBURGER, Andreas (CERN)

Session Classification: Hands-on session

Contribution ID: 53

Type: **not specified**

Phoenix Hands-on

Friday, 18 October 2019 14:00 (1 hour)

Presenter: CORTINA, Emilio

Session Classification: Hands-on session

Contribution ID: 54

Type: **not specified**

Q&A, Discussion

Wednesday, 23 October 2019 15:15 (15 minutes)

Session Classification: HEP meets ASTRO

Contribution ID: 55

Type: **not specified**

Attempted Summary

Friday, 25 October 2019 09:30 (45 minutes)

Presenter: SALZBURGER, Andreas (CERN)

Session Classification: Introduction, Summary