IML News

Sergei Gleyzer (CMS)

Michele Floris (ALICE), Lorenzo Moneta (SFT)

Steven Schramm (ATLAS), Paul Seyfert (LHCb)

LHC PHYSICS CENTRE AT CERN

Outline

- **CMS ML Forum, ATLAS ML Workshop**

- **Data Science Seminar Series**

- **HEP Machine Learning Community White Paper (CWP)**

- **Marie-Curie Training Network in Statistics and Machine Learning in HEP**

News from LHC

- ## CMS: New ML Forum
  - ### Convened by: S. Gleyzer and M. Pierini
  - ### CMS ML workshop in early July

- ## ATLAS: ML Workshop
  - ### two weeks ago
  - ### 40+ talks on variety of applications to analysis, reconstruction, simulation etc.
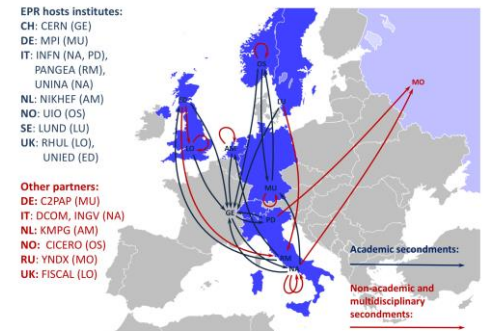
ML Seminar Series

- **New monthly LPCC data science seminar series at CERN**
  - **First seminar by Lorenzo Rosasco (MIT, IIT, University of Genova)**
    - **https://indico.cern.ch/event/643341/**
    - **On regularization of large-scale machine learning**
- **Seminar series agenda page:**
  - **https://indico.cern.ch/category/9320/**

HEP CWP

- **HEP Community White Paper (CWP) in Machine Learning**
  - **HEP Software Foundation HSF link**
  - **Machine Learning WG supporting workshops**
    - **SDSC/UCSD, CERN (IML workshop) Fermilab (DS@HEP)**
  - **HEP CWP work in progress, get involved**
    - **HSF Workshop in LAPP Annecy June 26-30**
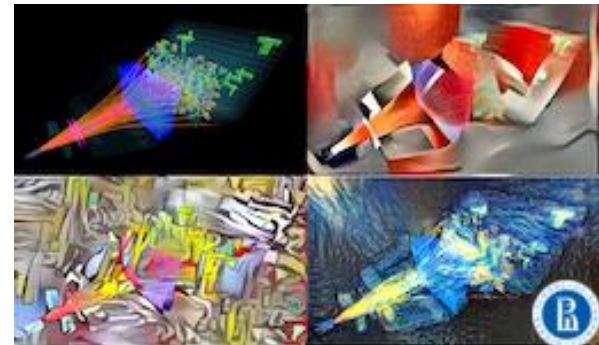   - **Google group**
    - **Google doc link**

INSIGHTS

- **New Marie-Curie Training Network in Statistics and Machine Learning in HEP**
  - **EU Universities, CERN + industry partners**
  - **In preparation, moving to next stage**

EPR hosts institutes:
CH: CERN (GE)
DE: MPI (MU)
IT: INFN (NA, PD),
    PANGEA (RM),
    UNINA (NA)
NL: NIKHEF (AM)
NO: UIO (OS)
SE: LUND (LU)
UK: RHUL (LO),
    UNIED (ED)

Other partners:
DE: C2PAP (MU)
IT: DCOM, INGV (NA)
NL: KMPG (AM)
NO: CICERO (OS)
RU: YNDX (MO)
UK: FISCAL (LO)

Academic secondments:

Non-academic and
multidisciplinary
secondments:

- **ESRs working on ML and Stats challenges for HEP**
  - **Physics analysis applications, software and tools**

Other news

- **1-day workshop (June 19) on Big Data Tools for Physics and Astronomy**
  - **https://indico.cern.ch/event/622093**

- **MLHEP Summer School**
  - **Reading, UK**
  - **17-23 July, 2017**

- **Fermilab ML (IC) Meeting, July 14, 2017**

Next IML Meeting

- ## July 13, 2017 at 15:00
    - ### in 40-S2-B01 (Salle Bohr)
    - ### https://indico.cern.ch/event/622093

- ## Suggested topics
    - ### Triggering Applications
    - ### Training

Today's Meeting

IML

Description Agenda under development. If you like to present, please contact iml.coordinators@cern.ch

Videoconference Rooms 🔵 IML-MachineLearning-WG   Join ▼   🎥 Filtration Plant ▼

15:00 → 15:10   **News and group updates**   🕐 10m ✏️▼

Speakers: Lorenzo Moneta (CERN) , Michele Floris (CERN) , Paul Seyfert (Universita & INFN, Milano-Bicocca (IT)) , Dr. Sergei Gleyzer (University of Florida (US)) , Steven Randolph Schramm (Universite de Geneve (CH))

15:10 → 15:20   **Machine learning knowledge base**   🕐 10m ✏️▼

Speaker: Matthew Feickert (Southern Methodist University (US))

15:20 → 15:40   **Deep learning for Phase-Space Integration**   🕐 20m ✏️▼

Speaker: Josh Bendavid (California Institute of Technology (US))

15:40 → 16:00   **Machine Learning for Phenomenological Models**   🕐 20m ✏️▼

Speaker: Bob Stienen

16:00 → 16:20   **Learning parton densities with neural networks: The NNPDF methodology**   🕐 20m ✏️▼

Speaker: Zahari Dimitrov Kassabov Zaharieva (Universita e INFN Torino (IT))

16:20 → 16:40   **Machine Learning of Calabi-Yau Volumes**   🕐 20m ✏️▼

Speaker: Daniel Krefl (CERN)

16:40 → 17:00   **An EoS-meter of QCD transition from deep learning**   🕐 20m ✏️▼

Speaker: Dr. Long-Gang Pang (Frankfurt Institute for Advanced Studies, Goethe University)