

Introduction to the 2nd IML workshop

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IML

2nd IML workshop
April 9, 2018

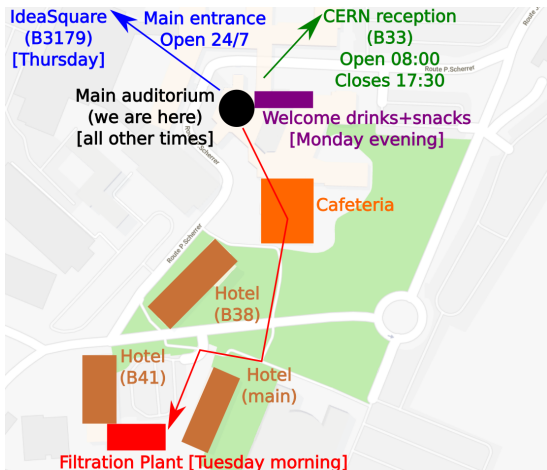


- Welcome to the **2018 iteration** of the IML workshop!
 - Last year's workshop can be found [here](#)
- A brief overview of the week's agenda:

Session	Topic	Location
<i>Monday</i>		
morning	Introduction and tracking	Main auditorium
afternoon	Industry session and panel	Main auditorium
evening	Welcome reception (drinks + snacks)	Outside of main auditorium
<i>Tuesday</i>		
morning	Simulation	Filtration plant (222-R-001)
afternoon	Interpretation and systematics	Main auditorium
<i>Wednesday</i>		
morning	Object tagging/identification	Main auditorium
afternoon	Heavy flavour and closing	Main auditorium
<i>Thursday</i>	Hackathon	CERN IdeaSquare (3179)

Getting around

- For those who are not familiar with CERN, check out **CERN maps**
- Here's a Google annotated map with the most important locations



- Wifi: CERN and eduroam networks are generally available
 - In some areas, there is a public CERN network too (only web access)
 - If you don't have CERN or eduroam, you can request temporary access
 - Connect to the CERN network and follow the instructions
 - List "Lorenzo Moneta" as your CERN guarantor
 - This is not automatic, so you will have to wait for Lorenzo to approve it
- Coffee breaks:
 - They will always be located immediately outside of the room
- Meals:
 - Breakfast, lunch, and dinner are available at the CERN cafeteria
 - There is a bank and ATMs downstairs from the main auditorium
- If you have any questions, contact us at iml.coordinators@cern.ch or ask us before/after each session or during coffee breaks

- We received a very large number of requests (>100)
 - These have to be made by hand
 - We suspect that most of the requests are not strictly needed
- If you really do need a certificate, please contact Cinzia Pinzoni
 - cinzia.pinzoni@cern.ch

- This afternoon, we will have an industry session
- Invited speakers:
 - David Pfau, Google DeepMind
 - Jean-Francois Puget, IBM Analytics
 - Andrey Ustyuzhanin, Yandex
- The industry session will consist of dedicated talks from each speaker, followed by an open industry panel
 - Come and ask leading industry experts your burning ML questions!

- Two invited plenary talks by ML experts
 - Monday at 09:30: Overview of ML in HEP, by Luke de Oliveira
 - Tuesday at 15:00: Interpreting DNNs, by Wojciech Samek
(head of Fraunhofer HHI ML group)
- One tutorial each day
 - Monday at 14:00: TMVA, by Lorenzo Moneta
 - Tuesday at 14:00: Keras/TensorFlow, by Stefan Wunsch
 - Wednesday at 14:00: advanced concepts, Michela Paganini

- Thursday's hackathon: [more details](#)
 - Come and work on ML projects with other HEP-ML enthusiasts!
 - Four projects proposed so far which you can work on with others
 - If you don't like any of them, you can also propose your own
- This will take place at the IdeaSquare (building 3179)
 - Go to the CERN main entrance, cross the road, and keep going
- We look forward to hacking together with you!

- Announced on March 30, there is a workshop “ML challenge”
 - All details can be found on the [challenge wiki](#)
 - Deadline for submission: April 10 at 23:59 (CERN time)
- Challenge: Jet mass regression at the FCC in very high-pileup
 - The goal is to minimize the jet mass resolution,
for the specified resolution definition = loss metric
- The winner gets a bottle of Champagne and a talk at a future monthly IML meeting explaining their solution

- All talks are planned to be recorded
 - Includes talks, plenaries, tutorials, etc
 - Recordings will be linked to the indico agenda when ready
- Speakers will receive a request for recording permission
 - If you have a CERN account, you should have received the request
 - For non-CERN account speakers, please confirm with us directly

Please ask questions!

- We believe that it is important to participate in the workshop
 - Speakers, please stay within your specified time to allow for questions
- The schedule has been planned accordingly
 - Each talk has an allocated question time
 - Each half-session (before and after coffee break) has a question buffer
- We will do our best to stick on time and also support your questions
 - Take advantage of this opportunity to learn from the community!
- Please use the microphones!
 - Important for both remote participants and recordings

A brief reminder on the IML

- The Inter-experimental Machine Learning (IML) working group was formed in October 2015, and was officially recognized by all four LHC collaborations and CERN in October 2016
- Goal: foster communication both between the HEP and ML communities, and within the HEP-ML community across experiments
 - More details can be found [in the mandate](#)
- We hold \sim monthly meetings and an annual workshop
 - Everyone interested in ML for HEP is invited to participate
 - We have frequent talks from both LHC and non-LHC speakers
- Follow our meetings by signing up: lhc-machinelearning-wg@cern.ch
 - Currently nearly 600 members and growing
 - If you are unable to sign up yourself, [contact the IML coordinators](#)

Announcements for post-workshop events

- Special visit by an ML speaker on Monday, April 16
 - Jim Dowling, from KTH Stockholm, an expert on distributed ML
 - Morning: seminar on data platforms and tools powering data science
 - [Seminar link](#)
 - Afternoon: talk on Hops Hadoop + a general Q&A session
 - [Session link](#)
 - Contact [Luca Canali](#) for more details
- Next IML monthly meeting: Monday, May 7 in Salle Dirac
 - [Agenda under construction](#)
- Fourth ML in HEP summer school: August 6-12, Oxford
 - [Registration is open now](#)

Thank you

- LPCC: LHC Physics Center at CERN
 - Sponsorship, organization, coffee breaks, and the reception
 - Michelangelo Mangano
 - Angela Ricci and Michelle Connor
- The LHC experiments, for their support of the IML
 - ALICE, ATLAS, CMS, and LHCb via the LPCC
- Michele Selvaggi for production of the challenge MC samples
- The CERN Webcast team for their support and recordings
- The industry and ML researchers who are joining us
- The entire HEP-ML community, for your interest and support
 - Regardless of your affiliation and field, we appreciate your involvement!

Welcome to the 2nd IML workshop!