



MLHEP 2020 @ EPFL

Lesya Shchutka

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# **MLHEP: Machine Learning in High Energy Physics Summer School**

The school is initiated and maintained by Yandex School of Data Analysis:  
full LHCb member and lightweight CMS member.

Previous iterations of the school:

- ① <https://indico.cern.ch/event/439520/>: St Petersburg, Russia, LHCP2015
- ② <https://indico.cern.ch/event/497368/>: Lund, Sweden, LHCP2016
- ③ <https://indico.cern.ch/event/613571/>: Reading, UK
- ④ <https://indico.cern.ch/event/687473/>: Oxford, UK
- ⑤ <https://indico.cern.ch/event/768915/>: DESY, Germany

## School scope

- school motivation:
  - *“There are plenty of essential problems in high energy physics that can be solved using Machine Learning methods. These vary from online data filtering and reconstruction to offline data analysis.”*
- content:
  - a theoretical and practical introduction to ML methods
  - concrete examples and hands-on tutorials
  - a special data-science competition with a winner at the end
  - goal: application of the new knowledge to participants' own problems
- target audience: PhD students and postdocs, Master students possible
- typical size: 60-70 participants
- speakers:
  - “core” speakers are from Yandex
  - 2-3 “invited” speakers from HEP and industry for topical presentations
- duration: 7-10 days

# Organizers and advisory board

<https://indico.cern.ch/event/768915/page/15157-committees>

## Organising Committee

Irina Plisetskaya (HSE, Russia)

Andrey Ustyuzhanin (YSDA, HSE, Russia)

## Program Committee

Denis Derkach (YSDA, HSE)

Nikita Kazeev (YSDA, HSE)

Alexander Panin (YSDA, Yandex)

Andrey Ustyuzhanin (YSDA, HSE)

## Advisory Board

Andrey Golutvin (Imperial College London, UK)

Daniel Whiteson (UCI, US)

Kyle Cranmer (NYU, US)

David Rousseau (LAL, France)

Vincenzo Vagnoni (INFN, Italy)

Victor Egorychev (ITEP, Russia)

Tommaso Dorigo (INFN, Italy)

Maurizio Pierini (CERN)

Marcin Chrzęszcz (UZH, Switzerland)

Guenakh Mitselmakher (UFL, US)

Sergey Gleyzer (UFL, US)

Tobias Golling (UNIGE, Switzerland)

Jean-Roch Vlimant (California Institute of Technology, US)

Vladimir Gligorov (LPNHE, France)

Mike Williams (MIT, US)

Tim Head (Wild Tree Technologies, Switzerland)

Alexei Klimentov (BNL, US & NRC "Kurchatov Institute", Russia)

## MLHEP2020 @ EPFL: Organizational matters

- venue: Cubotron building



- possible dates: within a period from July 5 to July 29 (after exams and before ICHEP)
- might want to avoid BOOST (July 20-24)
- Zuoz school is later (August 9-15)
- lunches / coffee-breaks: UNIL and EPFL cafeteria and catering
- main question: affordable accommodation for the students
- registration fee in the past: 300 EUR/400 GBP (w/o accommodation), 900 GBP (with accommodation), goal: total cost below 1.2 kCHF

## Lodging options

Exploring Lausanne student accommodations, e.g.:

- **Vortex**: being built for **Youth Olympic Games** in January 2020
  - can accommodate 1200 people: checking if there are 60 places in July



- **Triaudes**:
  - 202 furnished flat-share rooms, 440 CHF/2 weeks (minimal stay)
  - 48 furnished studio flats, 520 CHF/2 weeks (minimal stay)

School dates and duration will be fixed after having an accommodation offer.

## SCNAT funding application

- preliminary budget for 10-day school is available here: [gDoc](#)
- covers reception, coffee-breaks, excursion and a dinner, guest speakers
- -10 kCHF with the registration fee 350 CHF
- suggest to submit a proposal for 5-10 kCHF funding to SCNAT
- a request is prepared, waiting for the accommodation to fix the dates

## **Advertisement of the school within CHIPP**

- typically a (pre-)registration is open in January-February due to the long selection process
- at EPFL, will also attach ECTS credits for the doctoral school: can be considered for other universities as well
- hope to have high Swiss participation and benefit from the convenient location and timing!