CERN School of Computing 2020

Sunday, August 23, 2020 - Saturday, September 5, 2020

AGH University of Science and Technology

Academic programme

The complete programme will offer more than 50 hours of lectures and hands-on exercises. The programme is organized over three distinct tracks: Physics Computing, Software Engineering, and Data Technologies. In addition, guest lectures, student presentations and special evening talks will be organised. Finally, AGH (the hosting university) offers an optional, half-day CUDA training.

Physics Computing

Introduction to Physics Computing
by Arnulf Quadt (University of Göttingen)
2h lectures

Data Analysis
by Ivica Puljak (University of Split)
4h lectures + 3h exercises

Machine Learning
by Anna Scaife (University of Manchester)
3h lectures + 3h exercises

Data Science tools for interactive exploration
by Bob Jacobsen (UC Berkeley)
1-2h lecture (TBC)

Software Engineering

Software Design in the Many-Cores Era
by Enric Tejedor (CERN) and Andrei Gheata (CERN)
4h lectures + 3h exercises

Tools and Techniques
by Bob Jacobsen (UC Berkeley)
2h lectures + 3-5h exercises (TBC)

Creating Secure Software
by Sebastian Lopienski (CERN)
3h lectures + 3h exercises

Data Technologies

Data Management
by Alberto Pace (CERN)
4-5h lectures

Data and Storage Technologies
by Andreas J. Peters (CERN)

4h exercises

Data Visualization
by Eamonn Maguire (Facebook)
2h lectures + 2h exercises

Additional lectures

On top of the academic programme of the School, there are guest lectures scheduled:
Heterogeneous Programming
details and speaker to be confirmed

There will be also a session of short student presentations.

Finally, two special evening talks will be given by CSC lecturers:

When Internet history meets philosophy
by Francois Fluckiger (CERN)

Future of the Universe and of Humanity
by Ivica Puljak (University of Split)

(Optional) CUDA training

Fundamentals of Accelerated Computing with CUDA C/C++

This optional half-day course will allow you to learn how to accelerate and optimise existing C/C++ CPU-only applications to leverage the power of GPUs using innovative and modern CUDA techniques. It is also an excellent way to start working with highly optimised professional tools like Nsight integrated development environment with a graphical profiler. To start your journey with the massively parallel world, you are going to need a basic C/C++ competency, including familiarity with variable types, loops, functions, arrays, etc.

This course, kindly organized by AGH University of Science and Technology (the hosting university of CSC 2020), is offered to the participants of CSC 2020 for free (the usual fee is approximately 100 USD per person with non-profit academic background). The promotion code which unlocks the materials and computation time in NVIDIA cloud will be given to you at the beginning of the course. The materials can be accessed and run in the cloud for approximately six months after the course. **It is possible to get an official Certificate of Competency (CoC)** issued by the NVIDIA after completing the exam session (at the end of the course day, or at any convenient time up to six months after the CSC 2020).