
CERN

School Closing Address

Friday 8 November 2024

CSC 2024
On IT services

4-8 November 2024
Ferney-Voltaire

CSC 2024
On IT services

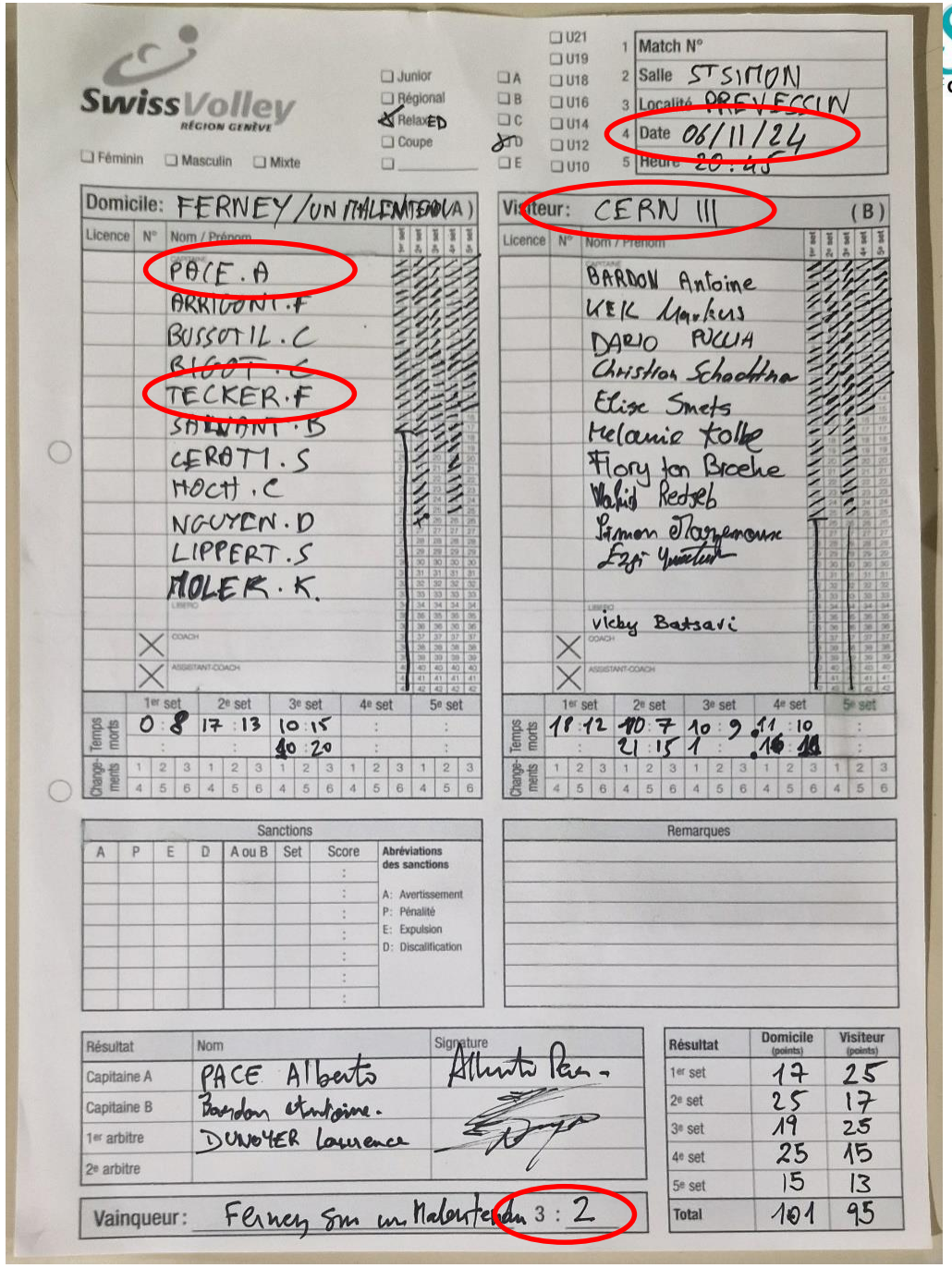
4-8 November 2024
Ferney-Voltaire

The new School on IT Services

- The school on IT Services aims to empower CERN members of personnel (including Students, Fellows, Origin, Quests, Staff, and Users) to get the most out of the computing services delivered by the CERN IT Department to the community.
- The school is for any person that use CERN IT services to deliver information, or analyzes data, or automates tasks or works in engineering projects.
- Participation is from both active users who would like to be more proficient and newcomers at CERN that would like to discover and get an introduction to the ecosystem of computing services available to all CERN users.

Repetita iuvant

This Wednesday …



SwissVolley RÉGION GENÈVE

☐ Féminin ☐ Masculin ☐ Mixte

☐ Junior ☐ Régional ☒ Relaxed ☐ Coupe ☐ _____

☐ A ☐ B ☐ C ☐ D ☐ E

☐ U21 ☐ U19 ☐ U18 ☐ U16 ☐ U14 ☐ U12 ☐ U10

1 Match N°
2 Salle ST SIMON
3 Localité PREVESSIN
4 Date 06/11/24
5 Heure 20:45

Domicile: FERNEY/VOLTAIRE (A)

Licence	N°	Nom / Prénom
		PACE.A
		ARRIGONI.F
		BUSSOTTI.C
		BIGOT.C
		TECKER.F
		SALVANI.B
		CEROTI.S
		HOCH.C
		NGUYEN.D
		LIPPERT.S
		MOLER.K.
	X	COACH
	X	ASSISTANT-COACH

Visiteur: CERN III (B)

Licence	N°	Nom / Prénom
		BARDON Antoine
		KEK Markus
		DARIO PUCCIA
		Christian Schaetzing
		Elise Smets
		Melanie Kolbe
		Flory Jan Broche
		Walid Redjeb
		Simon Mazzenoux
		Ezzi Yahia
		Vicky Batsavi
	X	COACH
	X	ASSISTANT-COACH

	1er set	2e set	3e set	4e set	5e set
Temps morts	0:8	17:13	10:15	:	:
	:	:	20:20	:	:
Changements	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

	1er set	2e set	3e set	4e set	5e set
Temps morts	18:12	10:7	10:9	11:10	:
	:	21:15	1 :	16:11	:
Changements	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

Sanctions

A	P	E	D	A ou B	Set	Score
						:
						:
						:
						:
						:
						:
						:

Abréviations des sanctions
A: Avertissement
P: Pénalité
E: Expulsion
D: Discalification

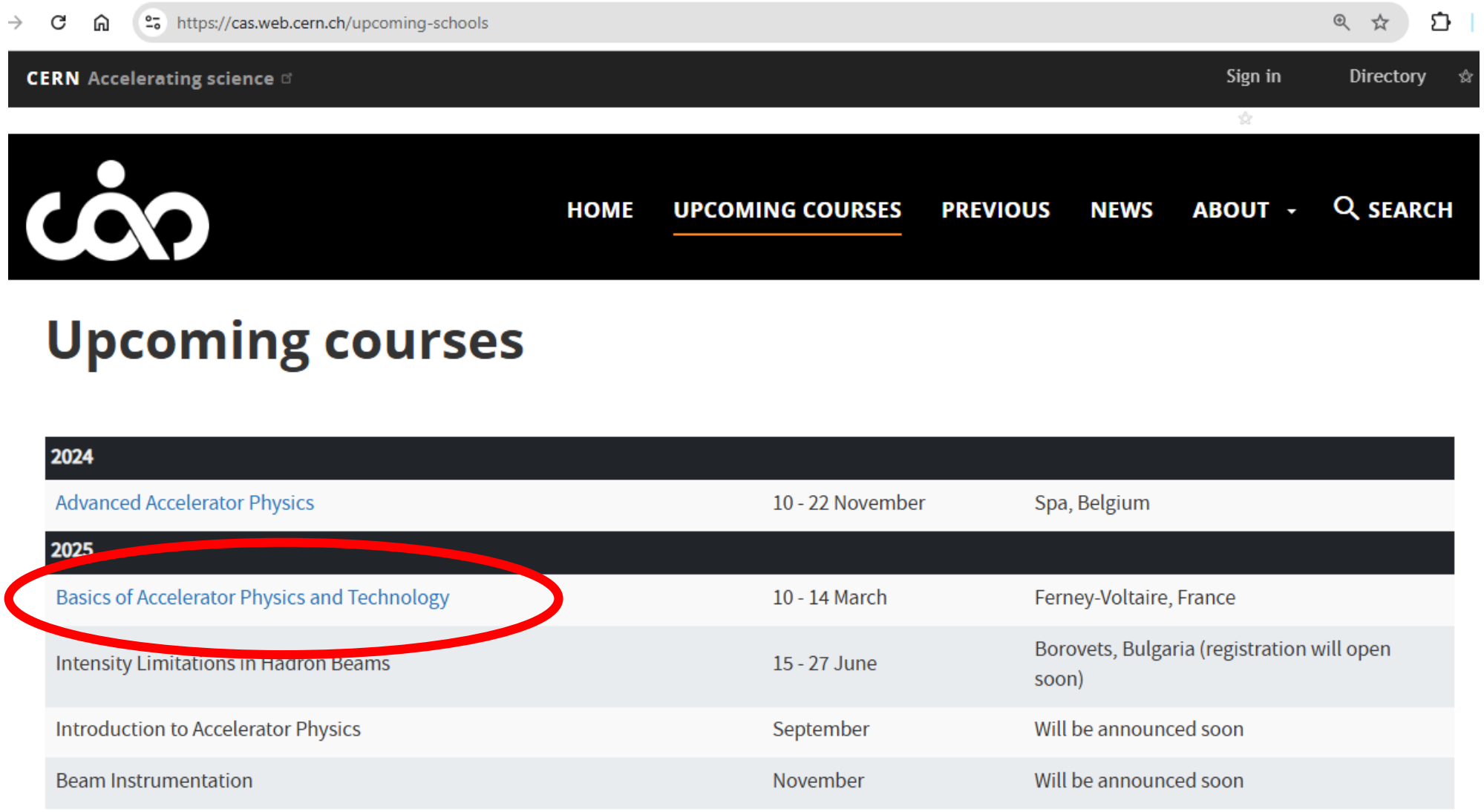
Remarques

Résultat	Nom	Signature
Capitaine A	PACE Alberto	
Capitaine B	Bardon Antoine.	
1er arbitre	DUNOYER Laurence	
2e arbitre		

Vainqueur: Ferney Sm en Malerte en 3 : 2

Résultat	Domicile (points)	Visiteur (points)
1er set	17	25
2e set	25	17
3e set	19	25
4e set	25	15
5e set	15	13
Total	101	95

Our sister school …



This is the first school on IT Services

- A pilot school
  - Your feedback will be extremely important
- Everything can be changed
  - Location: At CERN or outside ?
  - Topics: basic IT Services or advanced IT Services
  - Shorter school or longer school ?
  - Speakers: More speakers on shorter presentations or less speakers fovering services in depth ?
  - Exercises: Hands-on (need time) ? Demos ? Interactive ?
  - More social activities ? More dinners together ?

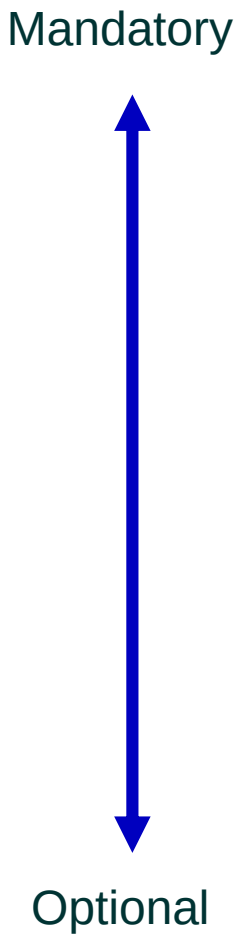
Repetita iuvant

Important: the feedback survey

- Feedback questionnaire
  - anonymous feedback about the School, lectures, exercises
  - details will come by e-mail
  - you must complete this feedback questionnaire
  - really, please do – we need your input, so that we can evolve, and get even better!
- All slides are published on the school indico website
- All participants will receive a “certificate of attendance”

The school learning process

- Learning process
  - Lectures
  - Exercises
  - Exam (Self Evaluation)
- Meet special persons, build trust with colleagues
  - Lunches, dinners, coffee breaks, (evenings)
  - Excursions
  - (Music events)
  - (Sport programme)



The Programme – 28 hours of lectures

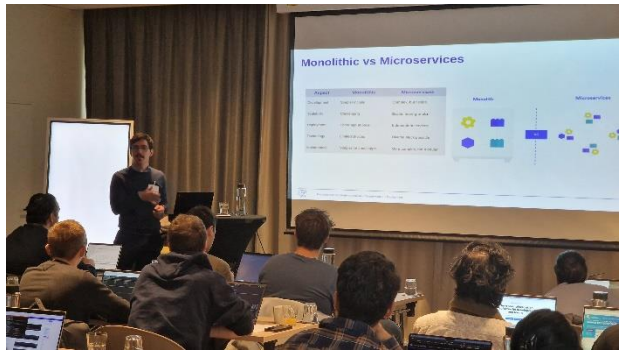
CERN School of Computing on IT Services 2024

from **Monday 4 November 2024 (08:30)** to **Friday 8 November 2024 (18:00)**

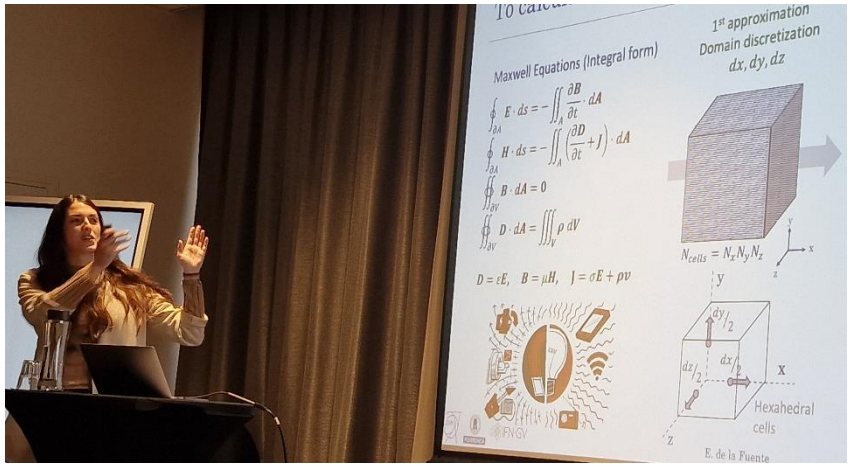
Monday 4 November 2024	Tuesday 5 November 2024	Wednesday 6 November 2024	Thursday 7 November 2024	Friday 8 November 2024
08:30 Welcome coffee				
08:45 Welcome address from t…				
09:00 Opening Session - Alberto Pace (CERN)	09:00 Project Management and documentation	09:00 Database Services (part 2 of 4) - DBoD maintenance exercises	09:00 Data Analysis Techniques using SWAN and REANA (part 2 of 3)	09:00 Lightning talks
10:00 Opening Lecture: The need for IT Service in accelerator and particl…	10:00 Core compute services (part 1 of 4) - Giacomo Tenaglia (CERN)	10:00 Core compute services (part 2 of 4) - Ben Jones (CERN)	10:00 Services for Machine Learning applications (part 1 of 3)	10:00 Data Analysis Techniques using SWAN and REANA (part 3 of 3)
11:00 Break	11:00 Break	11:00 Break	11:00 Break	11:00 Break
11:30 Student self presentation	11:30 Modern Application Development & Deployment (Part 1 of 2)	11:30 Database Services (part 3 of 4) - DBoD maintenance exercises	11:30 Core compute services (part 3 of 4) - Nils Høimyr (CERN)	11:30 Core compute services (part 4 of 4) - Giacomo Tenaglia (CERN)
12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Database Services (part 4 of 4) - Oracle Database - Andrzej Nowicki (CERN)
13:30 Storage (part 1 of 2) - Abhishek Lekshmanan (CERN)	13:30 Modern Application Development & Deployment (part 2 of 2)	13:30 Best practices for secure coding and deployment - Sebastian Lopienski (CERN)	13:30 Services for Machine Learning applications (part 2 of 3)	13:30 Lunch
14:30 Creation and maintenance of a website - Vasvi Sharma	14:30 Transport to UN	14:30 Data Analysis Techniques using SWAN and REANA (part 1 of 3)	14:30 Services for Machine Learning applications (part 3 of 3)	14:30 Self Assessment
15:30 Break	15:30 Social Activity - Visit to the United Nations in Geneva	15:30 Break	15:30 Break	16:00 Break
16:00 Storage (part 2 of 2) - Abhishek Lekshmanan (CERN)		16:00 Deploying applications (part 1 of 2) - Alberto Pimpo	16:00 Authentication and authorization - Hannah Short (CERN)	16:30 Closing Session - Alberto Pace (CERN)
17:00 Database Services (part 1 of 4) - Introduction to DBoD		17:00 Deploying applications (part 2 of 2) - Alberto Pimpo	17:00 Authentication and authorization (Excercises) - Hannah Short (CERN)	
	19:00 Social dinner			

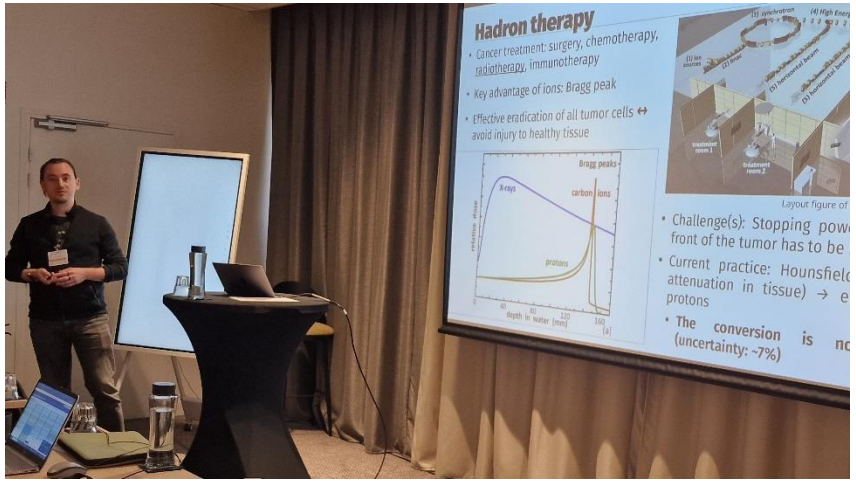
- Storage
- Web content
- Databases
- Application Development
- Security and authentication
- Services for data analysis
- Services for machine learning projects

School pictures on CERNBOX

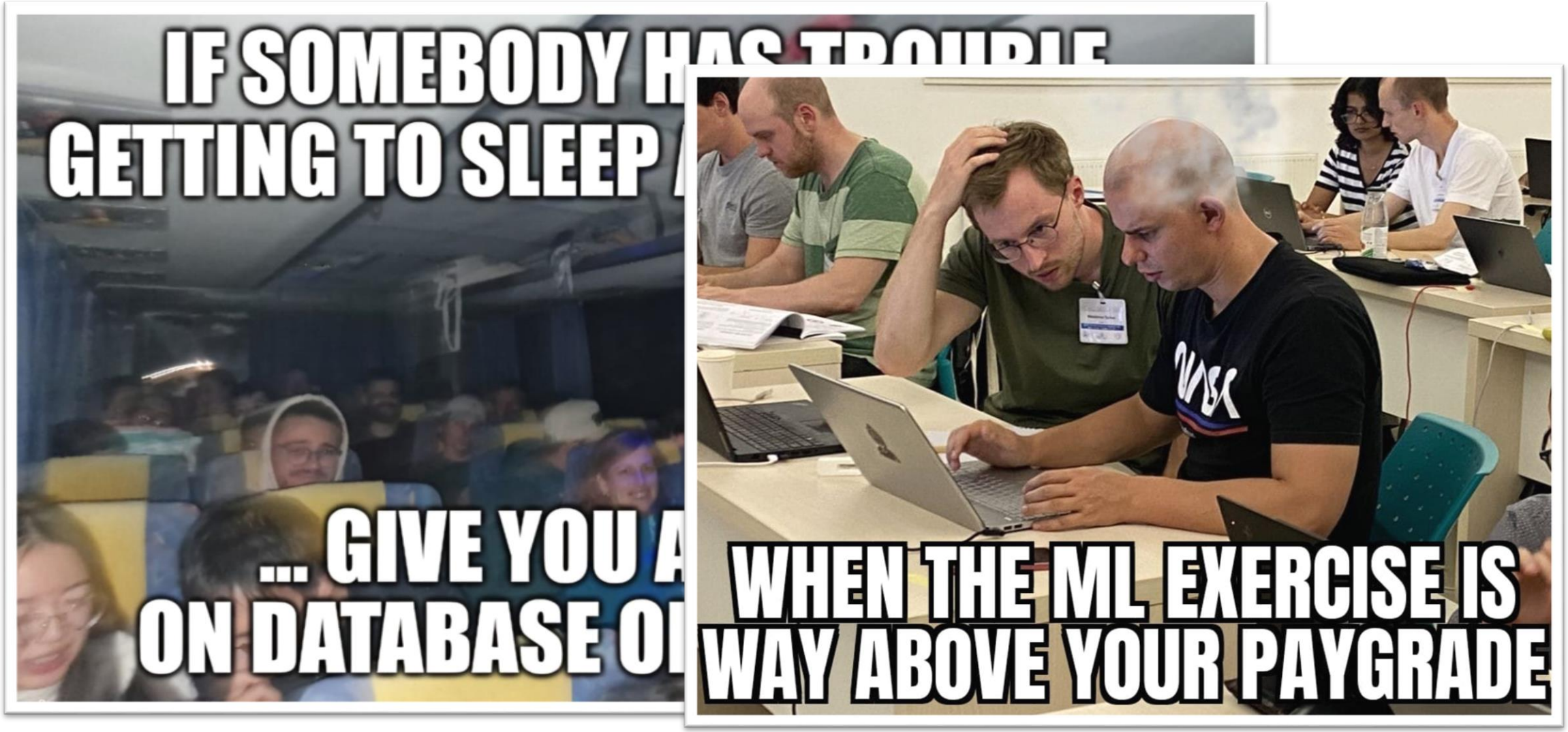


School lighting talks



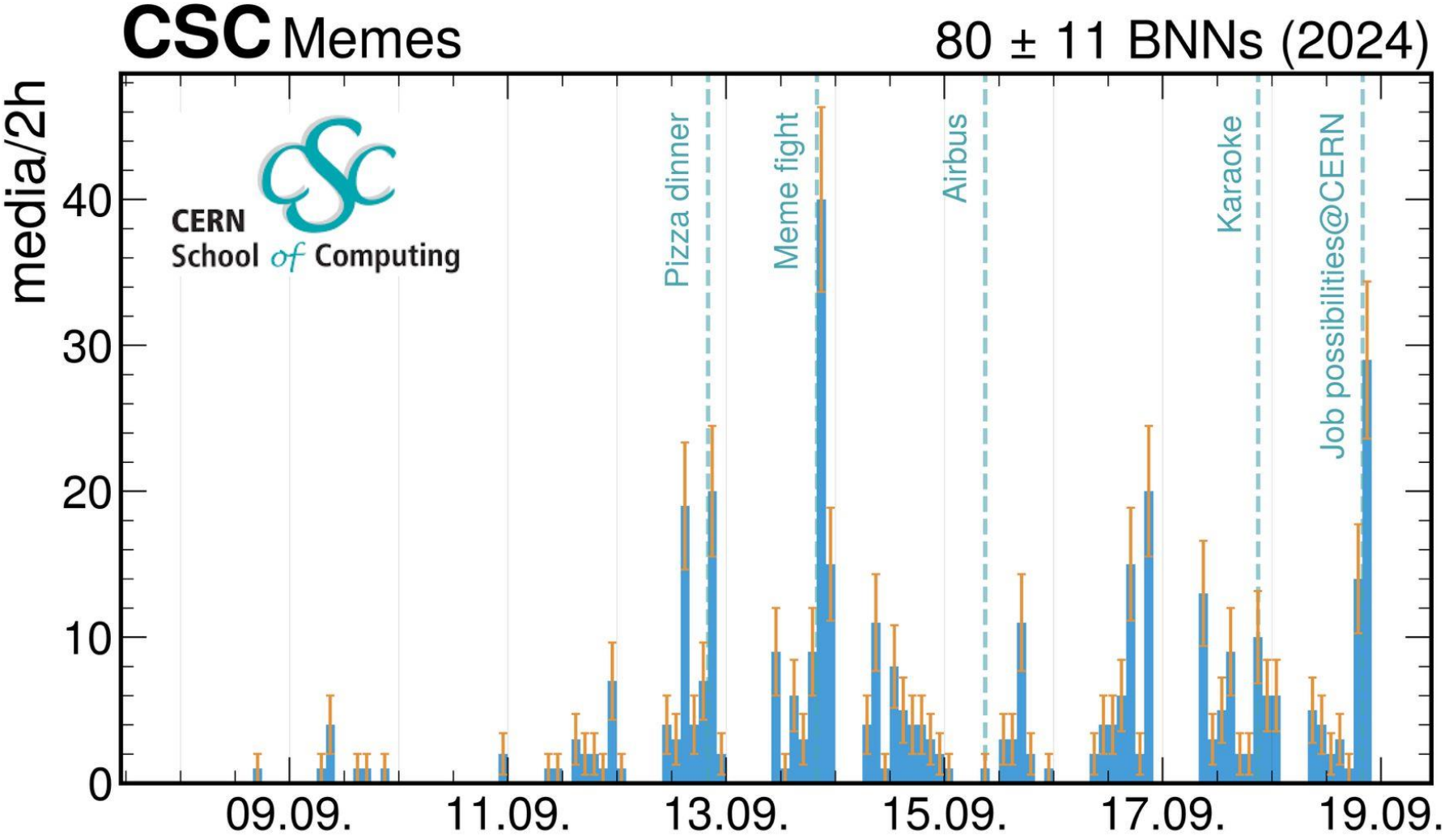


We did not have memes …



Do we need a memes competitions also at IT Services CSC ?

Increasing rate of memes at the last main school in Hamburg



Now, what's next ?

Post-school networking

- You will meet at CERN
- You can ask questions to students of the same promotion
- You can support IT services within your working environment
- You can continue ask questions to the lecturers you have met after the school …

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Upcoming CERN Schools of Computing

iCSC 2025
Inverted School

March 2025

Registration online in February

CERN, Geneva

sCSC 2025
Computer Security

April 2025

Subscription opens in December

Abingdon, UK

tCSC 2025
Machine Learning

June 2025

Subscription opens in February 25

Malmö, Sweden

CSC 2025

July / August 2025

Subscription opens In March 2025

Lund, Sweden

Unconfirmed
tCSC 2025
Heterogeneous Architectures

October 2025

Subscription opens in June 25

TBD

Unconfirmed
tCSC 2025
On IT Services

November 2025

Subscription opens in June 25

Ferney-Voltaire, France

Attend other CSCs ☺

Advertise CSC to your colleagues

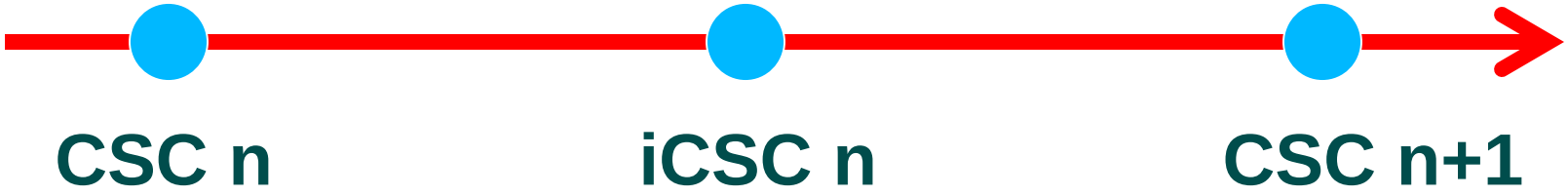
Advertise CSC to your management

The inverted CERN School of Computing

Why an inverted CSC ?

- At every CSCs, the sum of the knowledge of the students often exceeds the one of lecturer teaching, and that it is frequent to find in the room real experts on particular topics. This is the idea behind iCSC.

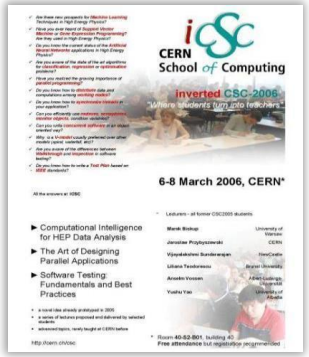
Reversing the roles



2025: will be the 16th edition of the iCSC

2005

2006



2008

2010

2011

2013

2014

2015

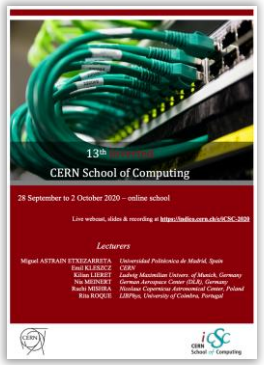
2016

2017

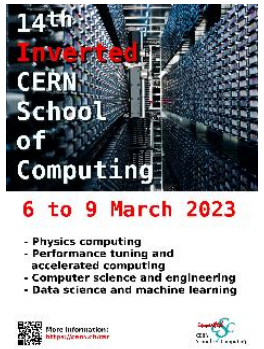
2018

2019

2020



2023



2024

The inverted CSC

- At the end of each main school, we call students present to make proposals. When we receive sufficient proposals of appropriate quality, we organize an inverted school.

- The students combine their skills and elaborate on CSC related subjects.

The iCSC lectures 2024 selection process

- A tough competition
  - We have received 24 outstanding proposals
  - A total of 48 hours of lectures
  - Hard choices had to be made
- This provided an excellent school content!

Selection process for iCSC lectures

- Discussions at the main / thematic school
- Lightning talks at the school
- Proposal after the school
- Review and selection by the CSC Advisory committee
- Lecture preparation and development with mentors
  - (1-2 mentors for each lecturer) (December, January)
- Finally, the presentation at the school

2023 -> 2024 …


thematic CSC, Split 2023


Main CSC, Tartu 2023


security CSC, Split 2023
MEDITERRANEAN
INSTITUTE FOR
LIFE SCIENCES

2024 iCSC lecturers

Bernardo Abreu Figueiredo
Karlsruhe HKA

Pratik Jawahar
University of Manchester

Spyridon Trigazis
CERN

Vlad-Andrei Badoiu
University Politehnica Bucharest

Vlad Nastase
University Politehnica Bucharest

Andrea Valenzuela Ramirez
CERN

Florine de Geus
CERN

Simone Rossi Tisbeni
Universita e INFN Bologna

Francesco Vaselli
Scuola Normale Superiore INFN, Pisa

Robin Hofsaess
KIT

Cristian Schuszter
CERN

Zenny Jovi Joestar Wettersten
CERN

The 2023 topics

- Cloud & Containers - Everything you need to know
- Everything that can go wrong in a message passing system
- Authentication and Authorization for the WLCG
- Quantum Computing
- How a real-world C++ compiler works
- CPU Performance Profiling on Linux in the HEP Context
- Multiplatform Programming with Python
- A simple introduction to accelerated computing
- The most beautiful line you can draw with Kalman filter
- An introduction to Bayesian neural networks and uncertainty quantification in neural networks
- Graph Neural Networks: From fundamentals to Physics application
- MLOps - Going from Good to Great
- A Crash Course on Reinforcement Learning

The 2024 topics

- IPv6 adoption. How is it going?
- Computer Networks in HEP
- Networking for HPC
- Functional programming and its relevance for HEP computing
- Unraveling Grid Computing: From Basics to WLCG
- Revolutionizing HEP Simulations: A Comprehensive Introduction to Generative Models
- A Gentle Introduction to GPT Models and Their Impact on the HEP Community
- A Practical Guide to Modern Natural Language Processing
- Why do machines learn? Introduction to fundamentals and common misconceptions in ML
- The perfectly parallel program
- GPU Programming Made Easy with CuPy
- Advanced git course: How to git good!

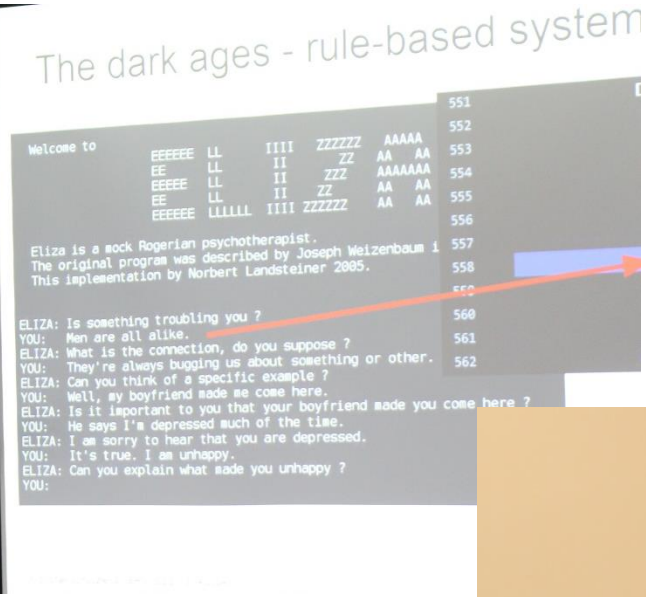
Lecturers at the iCSC

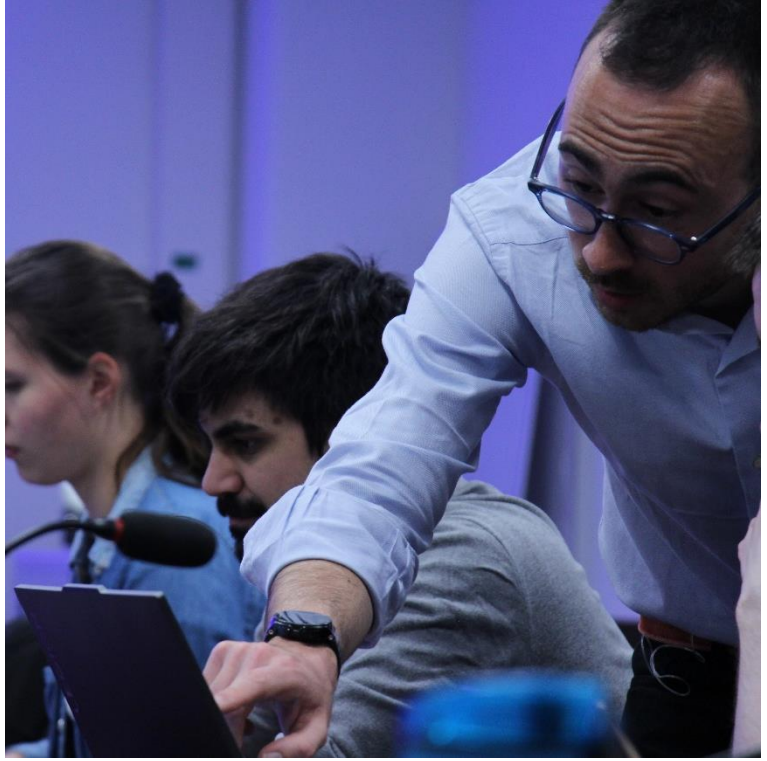
- Many iCSC lecturers have become lecturers at various CSC schools
  - Sebastian Lopienski (2005), Brice Copy (2005), Zornitsa Zaharieva (2005), Andrzej Nowak (2008), Benjamin Radburn-Smith (2010), Thomas Keck (2016), Daniel Campora (2017) , Eamonn Maguire (2017), Hannah Short (2018), Tom Dack (2023), Francesco Vaselli (2024)

- ... And one of them became director of the school

Inverted School 2024

Where students become teachers

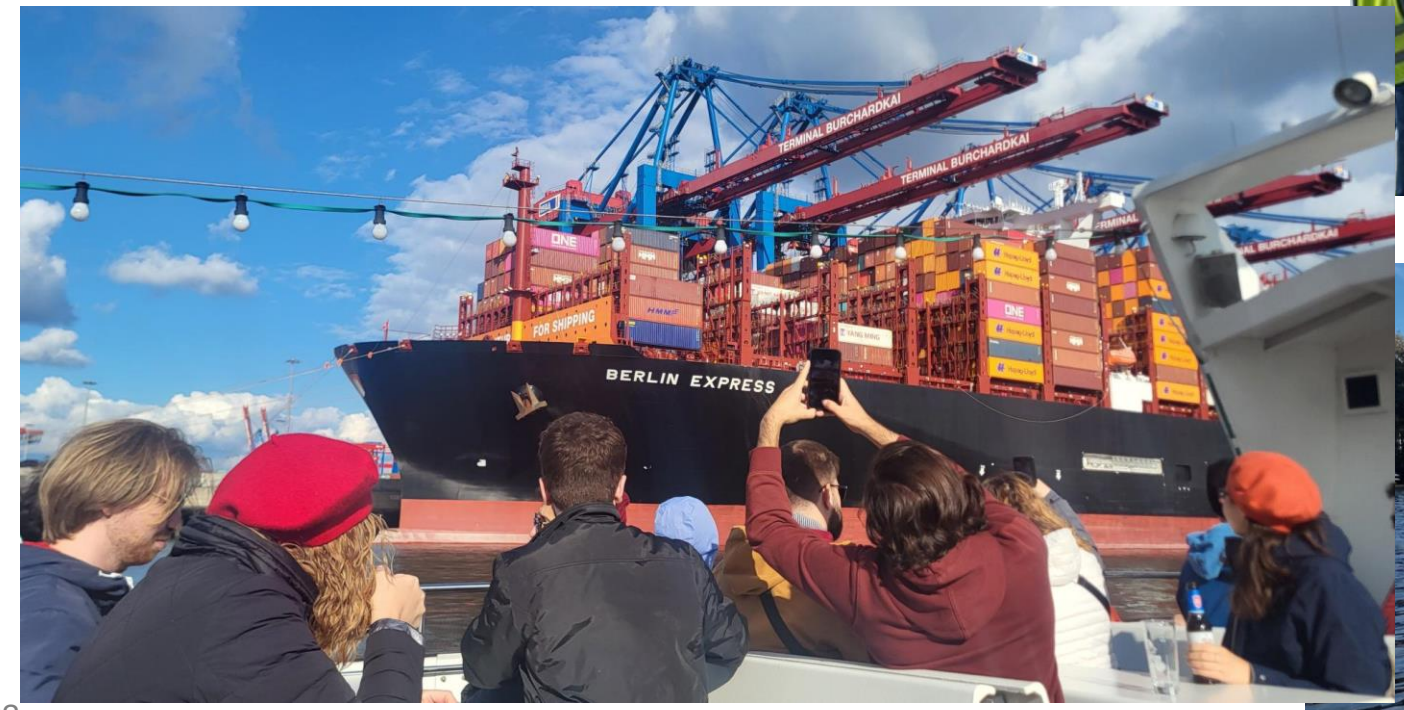




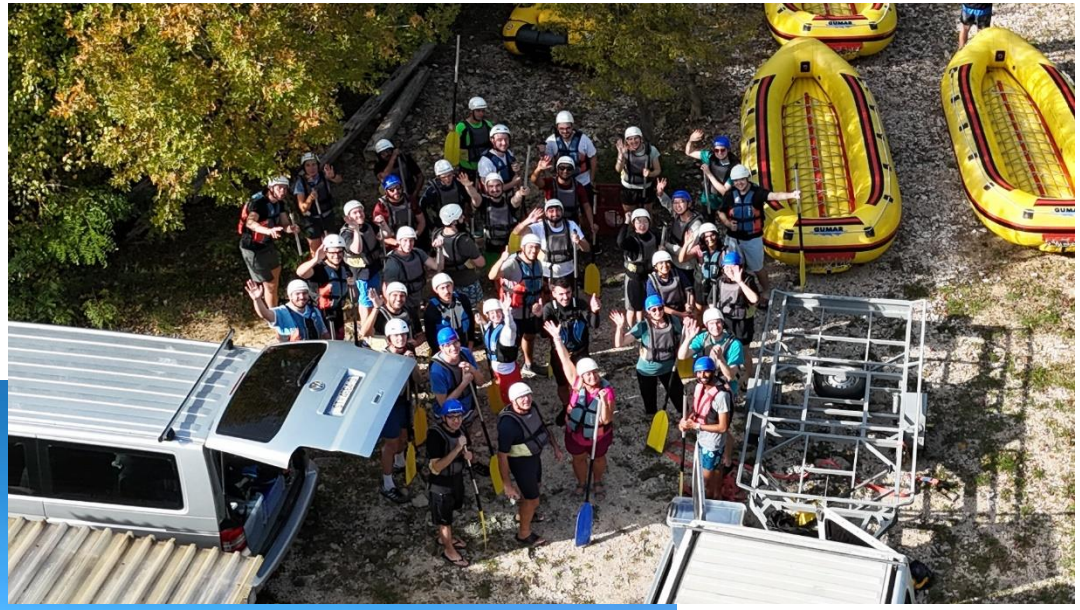
Where teachers become students ….

tCSC in Belgrade (Heterogeneous Architectures)

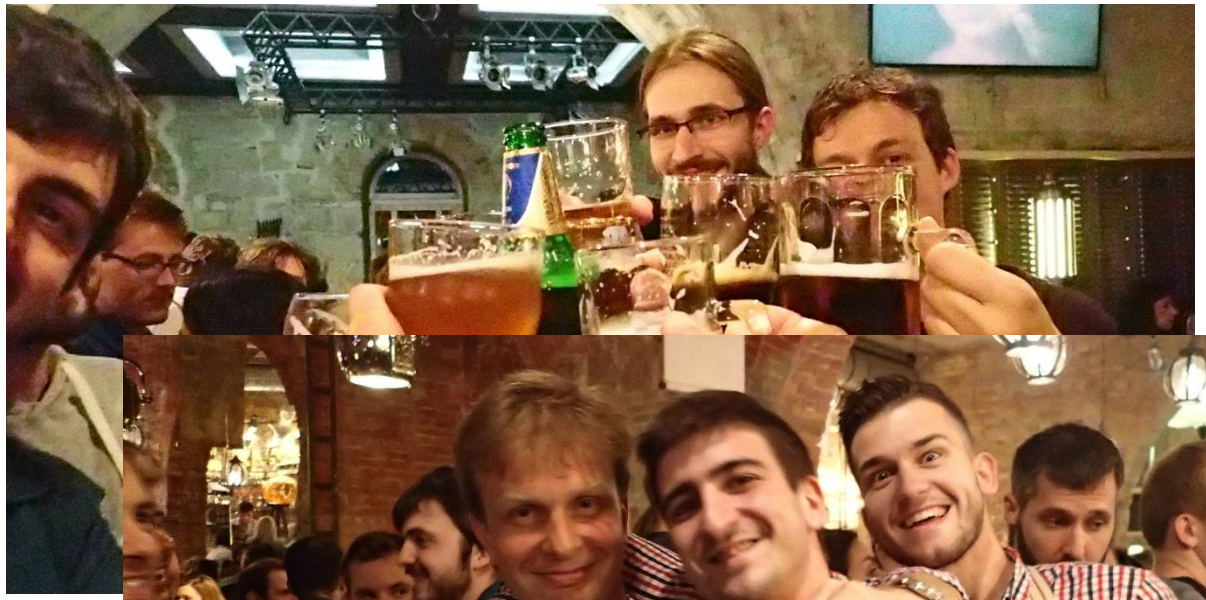
Main CSC, Hamburg



tCSC (Machine Learning), Split



Check the dress code …



Thanks

We had 20 lecturers !

- The CSC speakers put in a lot of effort to prepare relevant lectures and exercise
- Without lecturers… no school !
- It is a major commitment to come and lecture at the school

Francisco Borges	IT-PW-WA	Andrzej Nowicki	IT-DA-DB
Diogo Castro	IT-SD-GSS	Alberto Pace	IT-GOV
Raulian-Ionut Chiorescu	IT-CD-PI	Alberto Pimpo	IT-PW-WA
Marco Donadoni	IT-CA-OSR	Sebastien Ponce	EP-LBC
Diana Gaponcic	IT-CD-PI	Ricardo Rocha	IT-CD-PI
Ben Jones	IT-CD-CC	Vasvi Sharma	IT-PW-WA
Nils Høimyr	IT-CD-CC	Hannah Short	IT-PW-IAM
Abhishek Lekshmanan	IT-SD-PDS	Tibor Simko	IT-CA-OSR
Sebastian Lopienski	IT-PW-WA	Enric Tejedor	IT-DA-ASM
Pedro Miguel Esteves	IT-DA-ASM	Giacomo Tenaglia	IT-CD-CC

And a special thanks to … Andzrxey, Annjay, Andrzej

And …

- Kristina !

Finally …

- **Thanks to you, the 31 participants !**

Finally …

- **Thanks to you, the 31 participants !**

Shahzaib Aamir	IT-RM
Berk Balci	IT-PW-IAM
Nayana Bangaru	EP-DT
Gábor Bíró	EP-UAI
Abhishek Bohare	EP - LHCb Experiment
Marco Buonsante	EP-UCM
Gianluca De Bonis	CD-CC
Elena de la Fuente Garcia	BE-ABP-CEI
Jesse Geens	IT-SD-GSS
Ediz Genc	EP-CMG
Panagiotis Georgopoulos	IT-DA-DS
Daniel Goncalves Portovedo	IT-PW-ARW
Panagiotis Gkonis	IT-CD-CC
Dmytro Gruzdo	IT-DA-DB
Hannes Jakob Hansen	PW-PI
Musa Kaymaz	EN-AA-AS

Idriss Larbi	IT-SD-TAB
Manuel Ramirez Garcia	LHCb
Rimsky Alejandro Rojas Caballero	EP-ADT-TR
Jonathan Samuel	IT-CD
Nikolaos Smyrnioudis	IT-DA-DB
Lorenzo Valentini	IT-CD-CC
Jan Hauke Voss	EP-UCM
Julian Weick	EP-DT
Joao Ramiro	RCS-SIS-TS
Lorenzo Ventura Vagliano	RCS-SIS-TS
Pascal Egner	RCS-SIS-TS
Jakub Jelinek	IT-CD-CLI
Luis Pelaez Bover	IT-PW-WA
Franciska-Leonora Toeroek	IT-PW-WA

Finally …

- **Thanks to you, the 31 participants !**

A last message as School Director

- Each school is a Marathon and takes between 1 to 2 years to organize
- Some take-home messages … about the school

It was a dense week !

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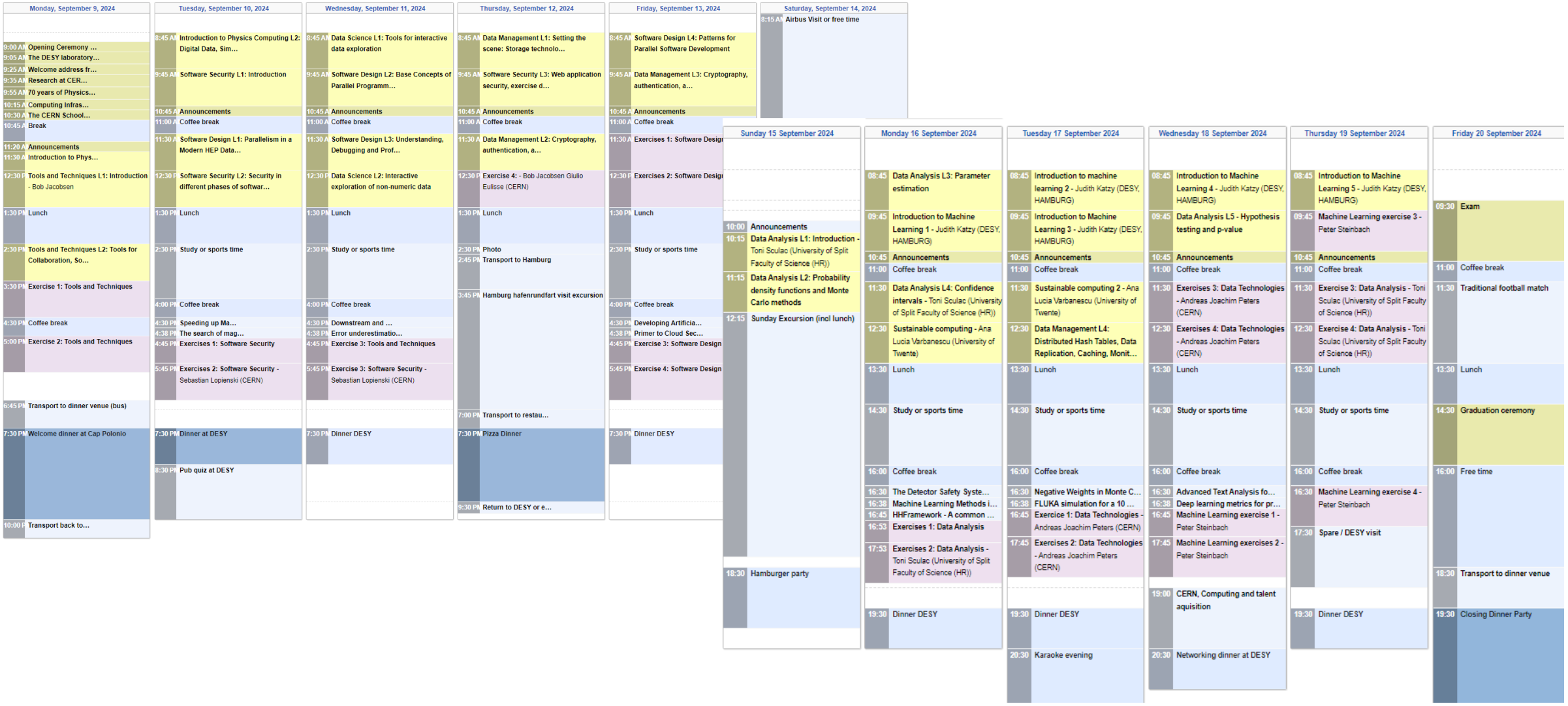
16:00 Storage (part 2 of 2) - Abhishek Lekshmanan (CERN)		16:00 Deploying applications (part 1 of 2) - Alberto Pimpo	16:00 Authentication and authorization - Hannah Short (CERN)	16:30 Closing Session - Alberto Pace (CERN)
17:00 Database Services (part 1 of 4) - Introduction to DBoD	19:00 Social dinner	17:00 Deploying applications (part 2 of 2) - Alberto Pimpo	17:00 Authentication and authorization (Excercises) - Hannah Short (CERN)	

Beware … it could be two weeks !



Monday, September 9, 2024

- 9:00 AM Opening Ceremony …
- 9:05 AM The DESY laboratory…
- 9:25 AM Welcome address fr…
- 9:35 AM Research at CER…
- 9:55 AM 70 years of Physics…
- 10:15 A Computing Infras…
- 10:30 A The CERN School…
- 10:45 A Break
- 11:20 A Announcements
- 11:30 A Introduction to Phys…
- 12:30 P Tools and Techniques L1: Introduction - Bob Jacobsen
- 1:30 PM Lunch
- 2:30 PM Tools and Techniques L2: Tools for Collaboration, So…
- 3:30 PM Exercise 1: Tools and Techniques
- 4:30 PM Coffee break
- 5:00 PM Exercise 2: Tools and Techniques
- 6:45 PM Transport to dinner venue (bus)
- 7:30 PM Welcome dinner at Cap Polonio
- 10:00 P Transport back to…

Tuesday, September 10, 2024

- 8:45 A Introduction to Physics Computing L2: Digital Data, Sim…
- 9:45 A Software Security L1: Introduction
- 10:45 A Announcements
- 11:00 A Coffee break
- 11:30 A Software Design L1: Parallelism in a Modern HEP Data…
- 12:30 P Software Security L2: Security in different phases of softwar…
- 1:30 PM Lunch
- 2:30 PM Study or sports time
- 4:00 PM Coffee break
- 4:30 PM Speeding up Ma…
- 4:38 PM The search of mag…
- 4:45 PM Exercises 1: Software Security
- 5:45 PM Exercises 2: Software Security - Sebastian Lopienski (CERN)
- 7:30 PM Dinner at DESY
- 8:30 PM Pub quiz at DESY

Wednesday, September 11, 2024

- 8:45 AM Data Science L1: Tools for interactive data exploration
- 9:45 AM Software Design L2: Base Concepts of Parallel Programm…
- 10:45 A Announcements
- 11:00 A Coffee break
- 11:30 A Software Design L3: Understanding, Debugging and Prof…
- 12:30 P Data Science L2: Interactive exploration of non-numeric data
- 1:30 PM Lunch
- 2:30 PM Study or sports time
- 4:00 PM Coffee break
- 4:30 PM Downstream and …
- 4:38 PM Error underestimatio…
- 4:45 PM Exercise 3: Tools and Techniques
- 5:45 PM Exercise 3: Software Security - Sebastian Lopienski (CERN)
- 7:30 PM Dinner DESY

Thursday, September 12, 2024

- 8:45 AM Data Management L1: Setting the scene: Storage technolo…
- 9:45 AM Software Security L3: Web application security, exercise d…
- 10:45 A Announcements
- 11:00 A Coffee break
- 11:30 A Data Management L2: Cryptography, authentication, a…
- 12:30 P Exercise 4: - Bob Jacobsen Giulio Eulisse (CERN)
- 1:30 PM Lunch
- 2:30 PM Photo
- 2:45 PM Transport to Hamburg
- 3:45 PM Hamburg hafenrundfart visit excursion
- 7:00 PM Transport to restau…
- 7:30 PM Pizza Dinner
- 9:30 PM Return to DESY or e…

Friday, September 13, 2024

- 8:45 AM Software Design L4: Patterns for Parallel Software Development
- 9:45 AM Data Management L3: Cryptography, authentication, a…
- 10:45 A Announcements
- 11:00 A Coffee break
- 11:30 A Exercises 1: Software Desig…
- 12:30 P Exercises 2: Software Desig…
- 1:30 PM Lunch
- 2:30 PM Study or sports time
- 4:00 PM Coffee break
- 4:30 PM Developing Artificia…
- 4:38 PM Primer to Cloud Sec…
- 4:45 PM Exercise 3: Software Design
- 5:45 PM Exercise 4: Software Design
- 7:30 PM Dinner DESY

Saturday, September 14, 2024

- 8:15 AM Airbus Visit or free time

Sunday 15 September 2024

- 10:00 Announcements
- 10:15 Data Analysis L1: Introduction - Toni Sculac (University of Split Faculty of Science (HR))
- 11:15 Data Analysis L2: Probability density functions and Monte Carlo methods
- 12:15 Sunday Excursion (incl lunch)
- 18:30 Hamburger party

Monday 16 September 2024

- 08:45 Data Analysis L3: Parameter estimation
- 09:45 Introduction to Machine Learning 1 - Judith Katzy (DESY, HAMBURG)
- 10:45 Announcements
- 11:00 Coffee break
- 11:30 Data Analysis L4: Confidence intervals - Toni Sculac (University of Split Faculty of Science (HR))
- 12:30 Sustainable computing - Ana Lucia Varbanescu (University of Twente)
- 13:30 Lunch
- 14:30 Study or sports time
- 16:00 Coffee break
- 16:30 The Detector Safety Syste…
- 16:38 Machine Learning Methods i…
- 16:45 HHFramework - A common …
- 16:53 Exercises 1: Data Analysis
- 17:53 Exercises 2: Data Analysis - Toni Sculac (University of Split Faculty of Science (HR))
- 19:30 Dinner DESY

Tuesday 17 September 2024

- 08:45 Introduction to machine learning 2 - Judith Katzy (DESY, HAMBURG)
- 09:45 Introduction to Machine Learning 3 - Judith Katzy (DESY, HAMBURG)
- 10:45 Announcements
- 11:00 Coffee break
- 11:30 Sustainable computing 2 - Ana Lucia Varbanescu (University of Twente)
- 12:30 Data Management L4: Distributed Hash Tables, Data Replication, Caching, Monit…
- 13:30 Lunch
- 14:30 Study or sports time
- 16:00 Coffee break
- 16:30 Negative Weights in Monte C…
- 16:38 FLUKA simulation for a 10 …
- 16:45 Exercice 1: Data Technologies - Andreas Joachim Peters (CERN)
- 17:45 Exercises 2: Data Technologies - Andreas Joachim Peters (CERN)
- 19:30 Dinner DESY
- 20:30 Karaoke evening

Wednesday 18 September 2024

- 08:45 Introduction to Machine Learning 4 - Judith Katzy (DESY, HAMBURG)
- 09:45 Data Analysis L5 - Hypothesis testing and p-value
- 10:45 Announcements
- 11:00 Coffee break
- 11:30 Exercises 3: Data Technologies - Andreas Joachim Peters (CERN)
- 12:30 Exercises 4: Data Technologies - Andreas Joachim Peters (CERN)
- 13:30 Lunch
- 14:30 Study or sports time
- 16:00 Coffee break
- 16:30 Advanced Text Analysis fo…
- 16:38 Deep learning metrics for pr…
- 16:45 Machine Learning exercise 1 - Peter Steinbach
- 17:45 Machine Learning exercises 2 - Peter Steinbach
- 19:00 CERN, Computing and talent aquisition
- 20:30 Networking dinner at DESY

Thursday 19 September 2024

- 08:45 Introduction to Machine Learning 5 - Judith Katzy (DESY, HAMBURG)
- 09:45 Machine Learning exercise 3 - Peter Steinbach
- 10:45 Announcements
- 11:00 Coffee break
- 11:30 Exercise 3: Data Analysis - Toni Sculac (University of Split Faculty of Science (HR))
- 12:30 Exercise 4: Data Analysis - Toni Sculac (University of Split Faculty of Science (HR))
- 13:30 Lunch
- 14:30 Study or sports time
- 16:00 Coffee break
- 16:30 Machine Learning exercise 4 - Peter Steinbach
- 17:30 Spare / DESY visit
- 19:30 Dinner DESY

Friday 20 September 2024

- 09:30 Exam
- 11:00 Coffee break
- 11:30 Traditional football match
- 13:30 Lunch
- 14:30 Graduation ceremony
- 16:00 Free time
- 18:30 Transport to dinner venue
- 19:30 Closing Dinner Party

Sometimes we hear …

- There is too much to do, not enough time to rest or study
  - Reminder: Several activities are optional
  - Choice is freedom
- Any opportunity can be taken to rest ….


MARINA MARSEILLE
SAILING
WORLDWIDE
COMPETITION


Work
Hard


Play
Hard


The CERN CSC is not an everyday opportunity


If you liked it, tell your friend

The School Academic Dimension

- The school …
  - … is not a conference
  - … is not a place for lecturers to present their work, promote their projects
  - Does not replicate of common training available at home institutes, or in member state's universities
  - Does not deliver "technical training" courses

- Focus on **persistent knowledge**, less notions and knowhow

Global Values versus Local Values

- Global Values
  - Science, Sports, Music, Literature, …
- Local Value
  - Religion, Language, Literature, Music, …

Becoming a Science ambassador

- Science is universal, and the scientific approach to problem, in many fields, could resolve many conflicts and misunderstanding
- Go beyond the pure science or computing skills
  - Bridging different domains is a rare skill
- Learn and improve also
  - Your communication skills
  - Teamwork
  - Leadership
  - Professionalism
  - Respect for diversity

Be ambitious, be brave

Be just and fear not


That's all Folks!


CERN