

Announcements

Monday, September 16th

Welcome to CSC lecturers

Anna Scaife

University of Manchester



Arnulf Quadt

Universität Göttingen



Bob Jacobsen

University of California, Berkeley



Lectures and exercises

Lectures

- Heterogeneity of students and knowledge is expected
- Most classes have
 - introductory parts
 - in-depth sections
- **Be tolerant when you already know ...**
- It is just normal if at least once in the school ...YOU know more than the lecturer on one particular topic

Exercises – work in pairs

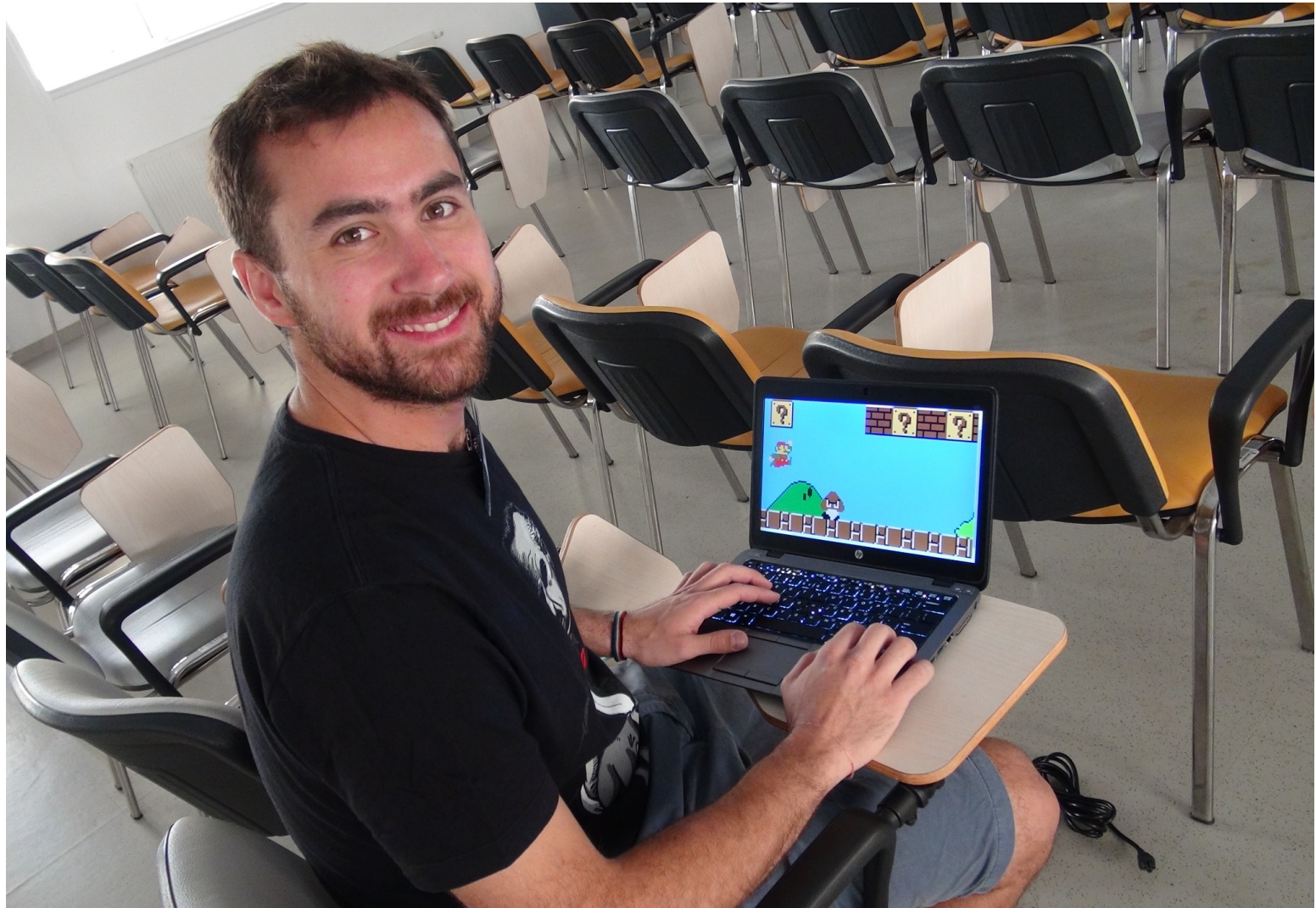
You should work in pairs

- preferably physicist + computer engineer
- preferably from different nationalities
- 2 persons doing together the same exercise
- you can use one or two laptops (your choice)
- you should help each other to solve the exercise



Exercises, VMs

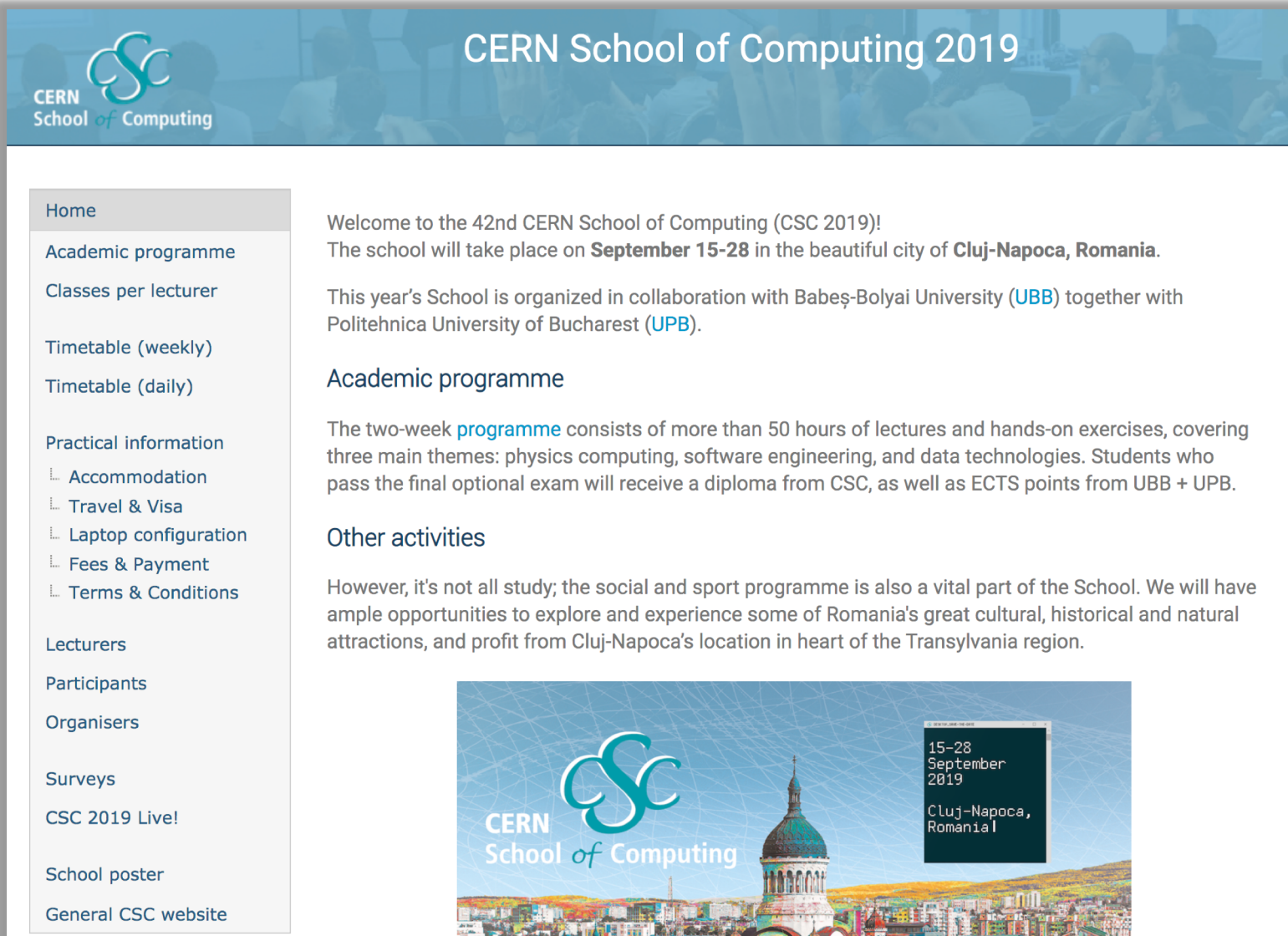
Any problem? Contact Nikos!



Keeping informed

CSC 2019 website

<https://indico.cern.ch/e/CSC-2019>



CERN School of Computing 2019

Home

Academic programme

Classes per lecturer

Timetable (weekly)

Timetable (daily)

Practical information

- Accommodation
- Travel & Visa
- Laptop configuration
- Fees & Payment
- Terms & Conditions

Lecturers

Participants

Organisers

Surveys

CSC 2019 Live!

School poster

General CSC website

Welcome to the 42nd CERN School of Computing (CSC 2019)!
The school will take place on **September 15-28** in the beautiful city of **Cluj-Napoca, Romania**.


This year's School is organized in collaboration with Babeş-Bolyai University (UBB) together with Politehnica University of Bucharest (UPB).

Academic programme

The two-week [programme](#) consists of more than 50 hours of lectures and hands-on exercises, covering three main themes: physics computing, software engineering, and data technologies. Students who pass the final optional exam will receive a diploma from CSC, as well as ECTS points from UBB + UPB.

Other activities

However, it's not all study; the social and sport programme is also a vital part of the School. We will have ample opportunities to explore and experience some of Romania's great cultural, historical and natural attractions, and profit from Cluj-Napoca's location in heart of the Transylvania region.



Keep informed: check CSC Live! regularly



The screenshot shows the website for the 42nd CERN School of Computing (CSC 2019). The header features the CSC logo and the text "CERN School of Computing 2019". A navigation menu on the left lists various sections, with "CSC 2019 Live!" highlighted in a red box. The main content area includes a welcome message, the school's dates and location, a description of the academic programme, and a mention of other activities. A banner at the bottom shows a cityscape with the CSC logo and a calendar snippet for September 15-28, 2019, in Cluj-Napoca, Romania.

CERN School of Computing 2019

Home
Academic programme
Classes per lecturer
Timetable (weekly)
Timetable (daily)
Practical information

- Accommodation
- Travel & Visa
- Laptop configuration

Welcome to the 42nd CERN School of Computing (CSC 2019)!
The school will take place on **September 15-28** in the beautiful city of **Cluj-Napoca, Romania**.

This year's School is organized in collaboration with Babeş-Bolyai University (UBB) together with Politehnica University of Bucharest (UPB).

Academic programme

The two-week [programme](#) consists of more than 50 hours of lectures and hands-on exercises, covering three main themes: physics computing, software engineering, and data technologies. Students who pass the final optional exam will receive a diploma from CSC, as well as ECTS points from UBB + UPB.

Other activities

The social and sport programme is also a vital part of the School. We will have more and experience some of Romania's great cultural, historical and natural Cluj-Napoca's location in heart of the Transylvania region.

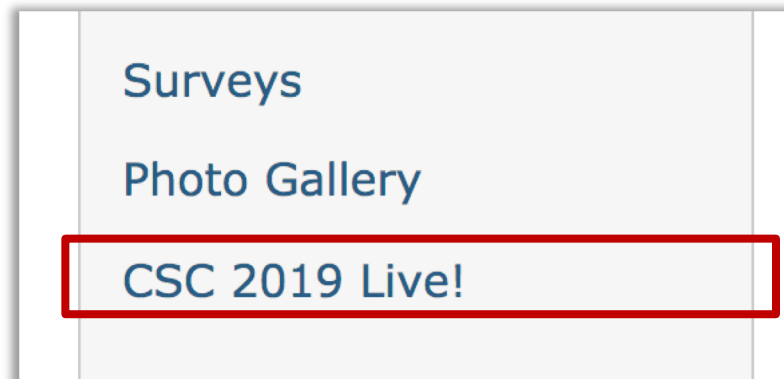
CSC 2019 Live!

School poster
General CSC website

15-28
September
2019
Cluj-Napoca,
Romania

Keep informed: check **CSC Live!** regularly

- All communication between the school organizers and the participants will be made using the CSC Live
- **You must read this page at least once a day**, in case you missed an announcement or a programme change



Updated timetable – check online!

Monday, 16 September 2019	Tuesday, 17 September 2019	Wednesday, 18 September 2019	Thursday, 19 September 2019	Friday, 20 September 2019	Saturday, 21 September 2019
08:45 Bus to Babeş-Bolyai U...	08:45 Tools and Techniques E1 - Bob Jacobsen (UC Berkeley)	08:45 Machine Learning L1: Understanding Classification	08:45 Software Design L1: Parallelism in a Modern HEP Data Processing ...	08:45 Data Science: Tools for interactive exploration - Bob Jacobsen (UC Berkeley)	08:45 Software Design E1 - Andrei Gheata (CERN) Enric Tejedor (CERN)
09:15 Opening Ceremony	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee
10:45 Welcome coffee	10:00 Tools and Techniques E2 - Bob Jacobsen (UC Berkeley)	10:00 Tools and Techniques L2: Tools for Collaboration, Software Engineering A...	10:00 Software Design L2: Base Concepts of Parallel Programming: A Pragm...	10:00 Software Design L3: Understanding, Debugging and Profiling a Complex ...	10:00 Software Design E2 - Enric Tejedor (CERN) Andrei Gheata (CERN)
11:15 Introduction to Physics Computing L1: Hadron Collider Physics	11:00 Tools and Techniques E3 - Bob Jacobsen (UC Berkeley)	11:00 Announcements	11:00 Announcements	11:00 Announcements	11:00 Software Design E3 - Enric Tejedor (CERN) Andrei Gheata (CERN)
	12:00 Announcements	11:15 Machine Learning L2: Gaussian Process Modelling	11:15 Machine Learning L3: Convolutional Neural Networks	11:15 Software Design L4: Patterns for Parallel Software Development	12:00 Announcements
12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch
	13:30 Study time / daily sports	13:30 Study time / daily sports	13:30 Special sports afternoon	13:30 Study time / daily sports	13:30 Free time
14:00 Software Security L1: Introduction - Sebastian Lopienski (CERN)					
15:00 Tools and Techniques L1: Introduction - Bob Jacobsen (UC Berkeley)	15:15 Guest lecture: Computational Science - The Third Pillar of Sci...	15:15 Student presentations		15:15 Guest lecture: Physics-inspired computer algorithms	
16:00 Announcements	16:15 Afternoon coffee	16:15 Software Security L3: Web application security, exercise debriefing		16:15 Afternoon coffee	
16:15 Afternoon coffee	16:30 Software Security E1 - Sebastian Lopienski (CERN)	17:15 Afternoon coffee		16:30 Machine Learning E1 - Anna Scaife (University of Manchester)	
16:30 Software Security L2: Security in different phases of software de...	17:30 Software Security E2 - Sebastian Lopienski (CERN)	17:30 Tools and Techniques E4 - Bob Jacobsen (UC Berkeley)		17:30 Machine Learning E2 - Anna Scaife (University of Manchester)	
17:30 Introduction to Physics Computing L2: Digital Data, Simulation and ...	18:30 Software Security E3 - Sebastian Lopienski (CERN)	18:30 Tools and Techniques E5 - Bob Jacobsen (UC Berkeley)		18:30 Machine Learning E3 - Anna Scaife (University of Manchester)	
20:00 Welcome dinner	20:00 Special dinner and pub quiz	20:00 Dinner		20:00 Dinner	20:00 Dinner

Color code?

Daily announcements and updates

Monday, 16 September 2019	Tuesday, 17 September 2019	Wednesday, 18 September 2019	Thursday, 19 September 2019	Friday, 20 September 2019	Saturday, 21 September 2019
08:45 Bus to Babeş-Bolyai U...	08:45 Tools and Techniques E1 - Bob Jacobsen (UC Berkeley)	08:45 Machine Learning L1: Understanding Classification	08:45 Software Design L1: Parallelism in a Modern HEP Data Processing ...	08:45 Data Science: Tools for interactive exploration - Bob Jacobsen (UC Berkeley)	08:45 Software Design E1 - Andrei Gheata (CERN) Enric Tejedor (CERN)
09:15 Opening Ceremony	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee
10:45 Welcome coffee	10:00 Tools and Techniques E2 - Bob Jacobsen (UC Berkeley)	10:00 Tools and Techniques L2: Tools for Collaboration, Software Engineering A...	10:00 Software Design L2: Base Concepts of Parallel Programming: A Pragm...	10:00 Software Design L3: Understanding, Debugging and Profiling a Complex ...	10:00 Software Design E2 - Enric Tejedor (CERN) Andrei Gheata (CERN)
11:15 Introduction to Physics Computing L1: Hadron Collider Physics	11:00 Tools and Techniques E3 - Bob Jacobsen (UC Berkeley)	11:00 Announcements	11:00 Announcements	11:00 Announcements	11:00 Software Design E3 - Enric Tejedor (CERN) Andrei Gheata (CERN)
12:30 Lunch	12:00 Announcements	11:15 Machine Learning L2: Gaussian Process Modelling	11:15 Machine Learning L3: Convolutional Neural Networks	11:15 Software Design L4: Patterns for Parallel Software Development	12:00 Announcements
14:00 Software Security L1: Introduction - Sebastian Lopienski (CERN)	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch
15:00 Tools and Techniques L1: Introduction - Bob Jacobsen (UC Berkeley)	13:30 Study time / daily sports	13:30 Study time / daily sports	13:30 Special sports afternoon	13:30 Study time / daily sports	13:30 Free time
16:00 Announcements	15:15 Guest lecture: Computational Science - The Third Pillar of Sci...	15:15 Student presentations		15:15 Guest lecture: Physics-inspired computer algorithms	
16:15 Afternoon coffee	16:15 Afternoon coffee	16:15 Software Security L3: Web application security, exercise debriefing		16:15 Afternoon coffee	
16:30 Software Security L2: Security in different phases of software de...	16:30 Software Security E1 - Sebastian Lopienski (CERN)	17:15 Afternoon coffee		16:30 Machine Learning E1 - Anna Scaife (University of Manchester)	
17:30 Introduction to Physics Computing L2: Digital Data, Simulation and ...	17:30 Software Security E2 - Sebastian Lopienski (CERN)	17:30 Tools and Techniques E4 - Bob Jacobsen (UC Berkeley)		17:30 Machine Learning E2 - Anna Scaife (University of Manchester)	
	18:30 Software Security E3 - Sebastian Lopienski (CERN)	18:30 Tools and Techniques E5 - Bob Jacobsen (UC Berkeley)		18:30 Machine Learning E3 - Anna Scaife (University of Manchester)	
20:00 Welcome dinner	20:00 Special dinner and pub quiz	20:00 Dinner		20:00 Dinner	20:00 Dinner



WhatsApp group

Unofficial communication channel

We recommend you to join the group



CSC 2019 🇷🇴

Tonight

12:30 Lunch

14:00 **Software Security L1:**
Introduction - Sebastian Lopienski (CERN)

15:00 **Tools and Techniques L1:**
Introduction - Bob Jacobsen (UC Berkeley)

16:00 **Announcements**

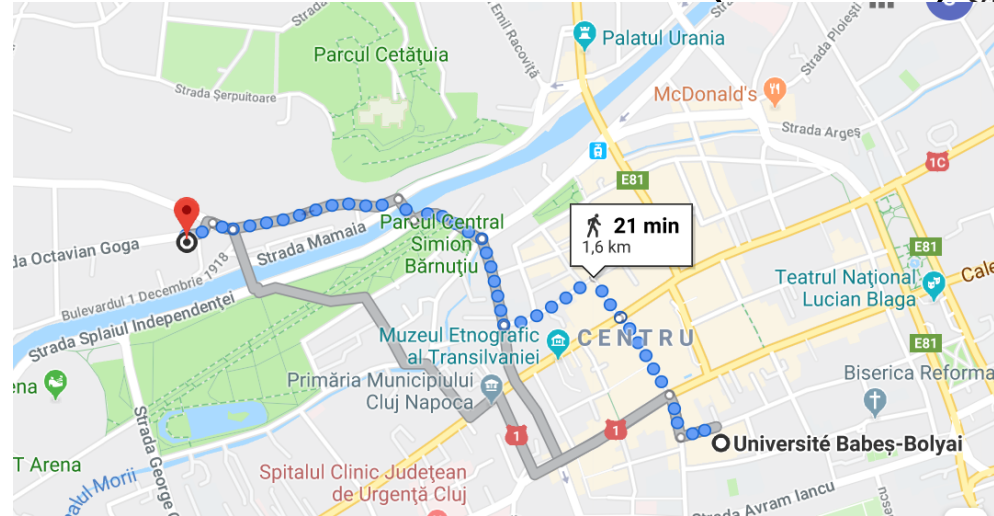
16:15 **Afternoon coffee**

16:30 **Software Security L2:**
Security in different phases of software de...

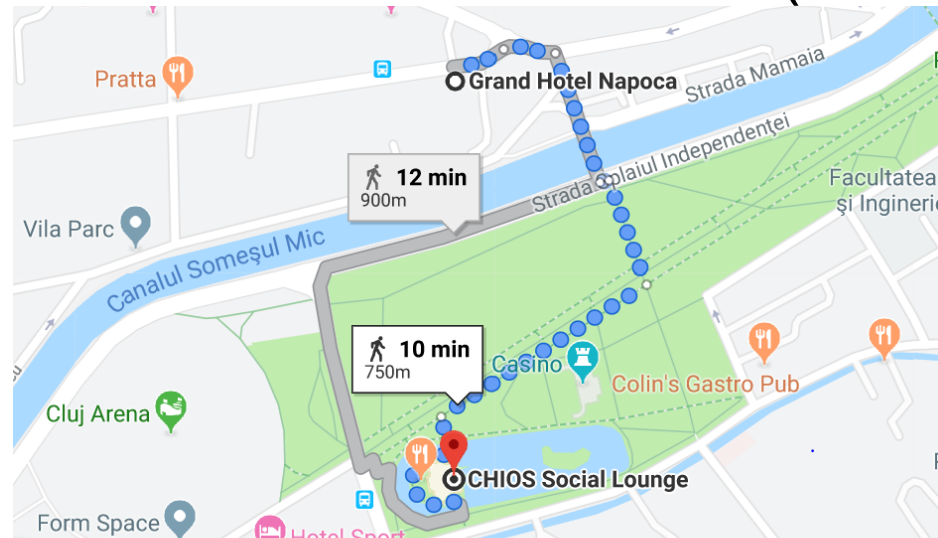
17:30 **Introduction to Physics Computing L2: Digital Data, Simulation and ...**

20:00 **Welcome dinner**

18:30 walk back to the hotel (20 min)



19:45 walk to Chios restaurant (7 min)



20:00 till ~22:00 Opening dinner

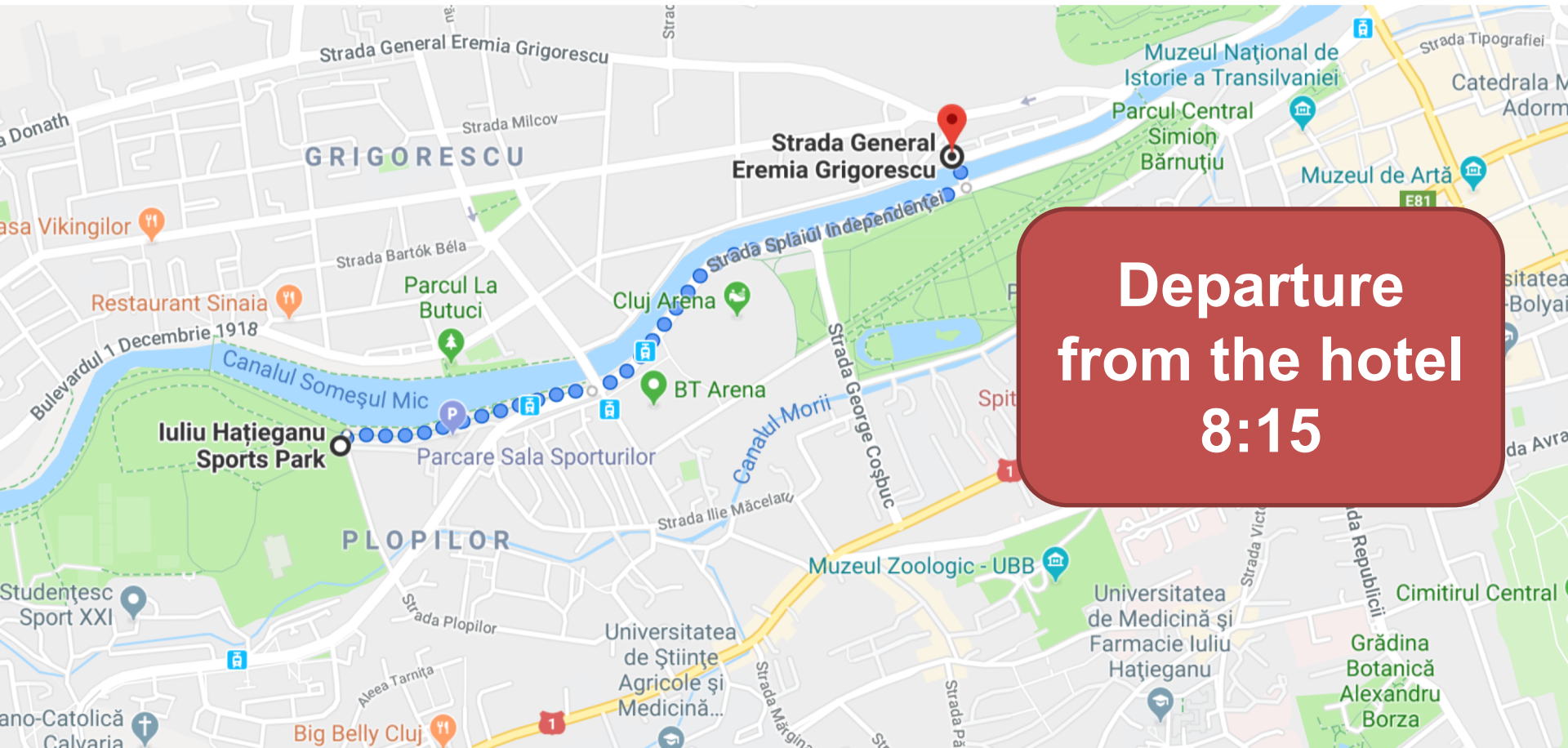
Opening dinner in Chios restaurant

This door,
first floor



Tomorrow

The rest of the school takes place at **UBB sports faculty**



08:45 **Tools and Techniques E1** -
Bob Jacobsen (UC Berkeley)

09:45 **Morning coffee**

10:00 **Tools and Techniques E2** -
Bob Jacobsen (UC Berkeley)

11:00 **Tools and Techniques E3** -
Bob Jacobsen (UC Berkeley)

12:00 **Announcements**

12:30 **Lunch**

13:30 **Study time / daily sports**

15:15 **Guest lecture:**
**Computational Science -
The Third Pillar of Sci...**

16:15 **Afternoon coffee**

16:30 **Software Security E1** -
Sebastian Lopienski (CERN)

17:30 **Software Security E2** -
Sebastian Lopienski (CERN)

18:30 **Software Security E3** -
Sebastian Lopienski (CERN)

20:00 **Special dinner and pub
quiz**

Study / sport time



A opportunity to do some sports

- swimming
- tennis
- beach volley
- basketball/volleyball (indoor)

Take your sport clothes and shoes

Tuesday, 17 September 2019

08:45 **Tools and Techniques E1** -
Bob Jacobsen (UC Berkeley)

09:45 **Morning coffee**

10:00 **Tools and Techniques E2** -
Bob Jacobsen (UC Berkeley)

11:00 **Tools and Techniques E3** -
Bob Jacobsen (UC Berkeley)

12:00 **Announcements**

12:30 **Lunch**

13:30 **Study time / daily sports**

15:15 **Guest lecture:**
Computational Science -
The Third Pillar of Sci...

16:15 **Afternoon coffee**

16:30 **Software Security E1** -
Sebastian Lopienski (CERN)

17:30 **Software Security E2** -
Sebastian Lopienski (CERN)

18:30 **Software Security E3** -
Sebastian Lopienski (CERN)

20:00 **Special dinner and pub**
quiz

Pub dinner and quiz



Ursus
brewery

**Wednesday afternoon –
student presentations session**

Student presentations

Monday, 16 September 2019	Tuesday, 17 September 2019	Wednesday, 18 September 2019	Thursday, 19 September 2019	Friday, 20 September 2019	Saturday, 21 September 2019
08:45 Bus to Babeş-Bolyai U...	08:45 Tools and Techniques E1 - Bob Jacobsen (UC Berkeley)	08:45 Machine Learning L1: Understanding Classification	08:45 Software Design L1: Parallelism in a Modern HEP Data Processing ...	08:45 Data Science: Tools for interactive exploration - Bob Jacobsen (UC Berkeley)	08:45 Software Design E1 - Andrei Gheata (CERN) Enric Tejedor (CERN)
09:15 Opening Ceremony	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee	09:45 Morning coffee
10:45 Welcome coffee	10:00 Tools and Techniques E2 - Bob Jacobsen (UC Berkeley)	10:00 Tools and Techniques L2: Tools for Collaboration, Software Engineering A...	10:00 Software Design L2: Base Concepts of Parallel Programming: A Pragm...	10:00 Software Design L3: Understanding, Debugging and Profiling a Complex ...	10:00 Software Design E2 - Enric Tejedor (CERN) Andrei Gheata (CERN)
11:15 Introduction to Physics Computing L1: Hadron Collider Physics	11:00 Tools and Techniques E3 - Bob Jacobsen (UC Berkeley)	11:00 Announcements	11:00 Announcements	11:00 Announcements	11:00 Software Design E3 - Enric Tejedor (CERN) Andrei Gheata (CERN)
	11:15 Machine Learning L2: Gaussian Process Modelling	11:15 Machine Learning L3: Convolutional Neural Networks	11:15 Machine Learning L3: Convolutional Neural Networks	11:15 Software Design L4: Patterns for Parallel Software Development	11:00 Software Design E3 - Enric Tejedor (CERN) Andrei Gheata (CERN)
	12:00 Announcements				12:00 Announcements
12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Lunch
	13:30 Study time / daily sports	13:30 Study time / daily sports	13:30 Special sports afternoon	13:30 Study time / daily sports	13:30 Free time
14:00 Software Security L1: Introduction - Sebastian Lopienski (CERN)					
15:00 Tools and Techniques L1: Introduction - Bob Jacobsen (UC Berkeley)	15:15 Guest lecture: Computational Science - The Third Pillar of Sci...	15:15 Student presentations		15:15 Guest lecture: Physics-inspired computer algorithms	
16:00 Announcements	16:15 Afternoon coffee	16:15 Software Security L3: Web application security, exercise debriefing		16:15 Afternoon coffee	
16:15 Afternoon coffee	16:30 Software Security E1 - Sebastian Lopienski (CERN)	17:15 Afternoon coffee		16:30 Machine Learning E1 - Anna Scaife (University of Manchester)	
16:30 Software Security L2: Security in different phases of software de...	17:30 Software Security E2 - Sebastian Lopienski (CERN)	17:30 Tools and Techniques E4 - Bob Jacobsen (UC Berkeley)		17:30 Machine Learning E2 - Anna Scaife (University of Manchester)	
17:30 Introduction to Physics Computing L2: Digital Data, Simulation and ...	18:30 Software Security E3 - Sebastian Lopienski (CERN)	18:30 Tools and Techniques E5 - Bob Jacobsen (UC Berkeley)		18:30 Machine Learning E3 - Anna Scaife (University of Manchester)	
20:00 Welcome dinner	20:00 Special dinner and pub quiz	20:00 Dinner		20:00 Dinner	20:00 Dinner

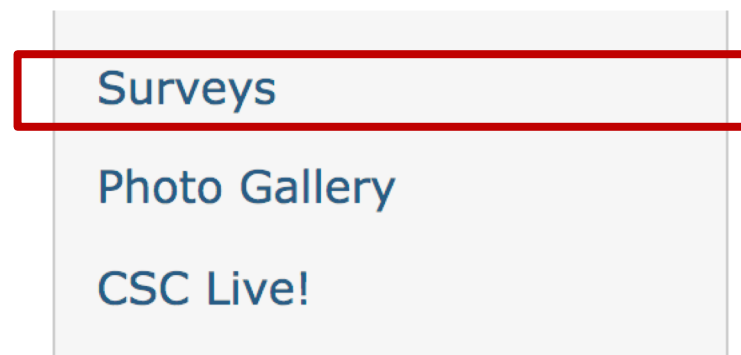
Presentations by Students

- Short presentation (5 - 10 minutes)
- **A scientific or a technical topic** – for example:
 - something related to the CSC programme
 - a technology, approach etc. that you are using
 - overview of the experiment for which you work
 - anything else (even if not work-related)
- ... but please avoid:
 - presenting an in-depth technical paper that requires extensive prior knowledge to understand

Presentations by Students

- Questions? Ideas to discuss?
=> **Talk to any organizer or lecturer**

- Submit your proposal
 - **Indico survey**
 - **deadline: TOMORROW 13:00**



Survey	Available from	Deadline	
Student presentations	13 Sep 2019, 00:00	17 Sep 2019, 13:00	Fill out

- We will confirm your presentation tomorrow afternoon