



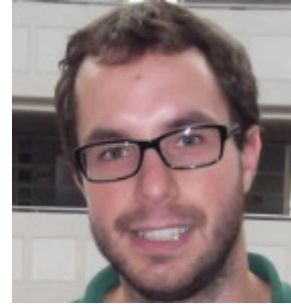


Welcome to the **thematic** CERN School of Computing on **Scientific Software for Heterogeneous Architectures**

Alberto Pace, school director

Lecturers

◆ Danilo Piparo (CERN, remote)



◆ Guilherme Amadio (CERN)



◆ Sebastien Ponce (CERN)



◆ Daniel Campora (NVIDIA)



CSC Organizers



Kristina Gunne
Administrator



Andrzej Nowicki
Technical Manager



Andjelina Petrović
Local organiser



Alberto Pace
Director

Olga Antonijević
Local organiser

Katarina Milić
Local organiser

School locations

- ◆ IN Hotel
- ◆ Comtrade campus, ITS School
- ◆ Other locations in Belgrade



Hotel facilities hours



WORKING HOURS Radno vreme

Infusion Café **07:00 – 23:00h**

Infusion Restaurant **12:00 – 23:00h**

Doručak/ Breakfast

- Radnim danima / Working days **06:30 - 10:00h**
- Vikendom / On weekends **06:30 - 10:30h**

INfinity Bar 8th floor

From Tuesday tu Saturday **17:00 – 01:00h**

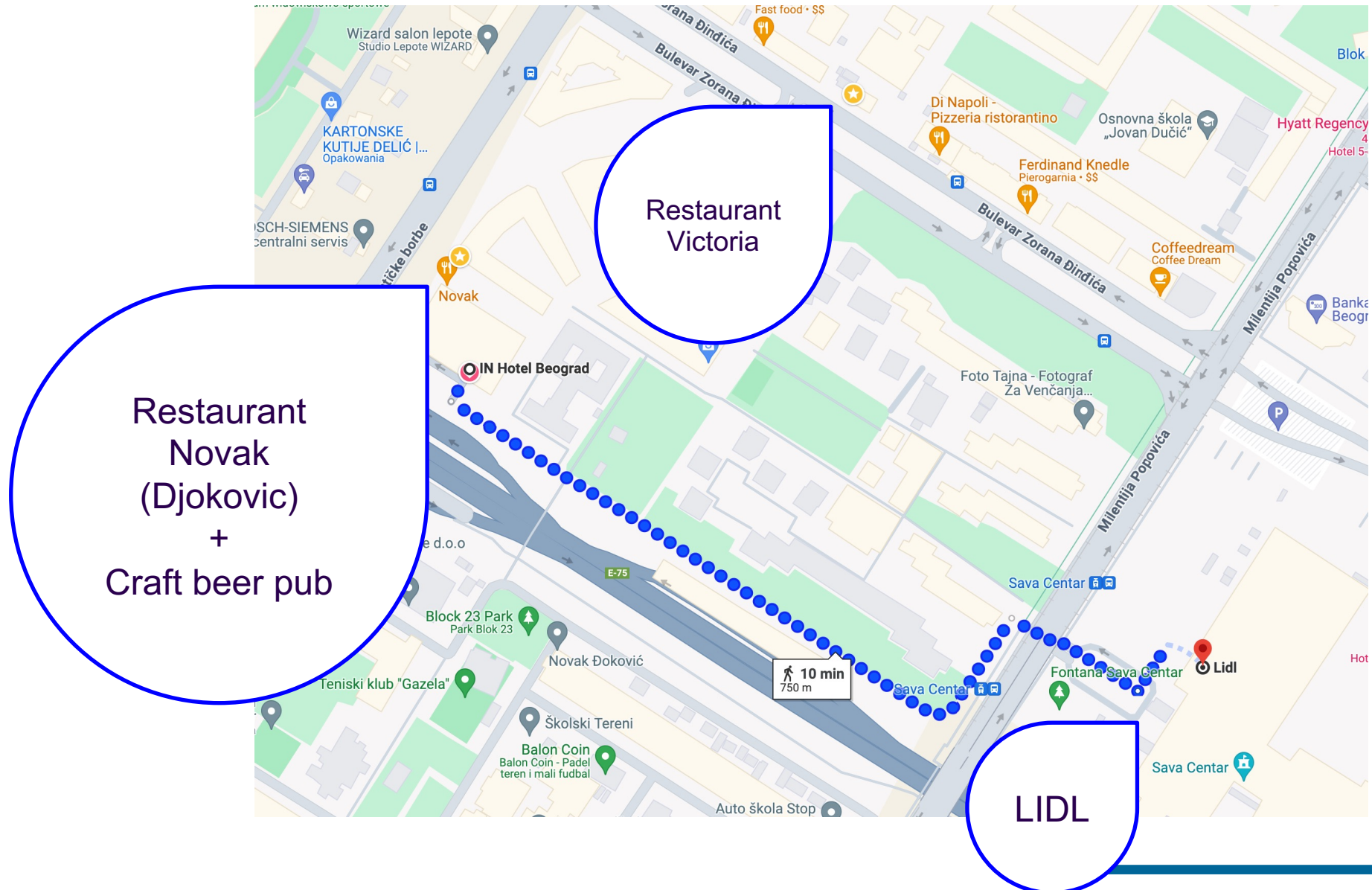
INFitness club

- Radnim danima /Working days **06:00 - 22:00h**
- Vikendom / On weekends **09:00 – 18.00h**

Hotel facilities

- ◆ Minibar **IS NOT** included in the School fee.
Any charges will come from your card
- ◆ There water bottle on the desk is complimentary (=free)
 - ◆ The water bottles in the fridge/minibar -> NO.
- ◆ The tap water is drinkable

Hotel neighbourhood



Getting around Belgrade

◆ Buses

◆ **Beograd Plus** app available in Play / AppStore

- ◆ It's possible to pay by card
- ◆ The app is not really available in English

◆ *50 RSD (~0,5 EUR) for a 90 minutes ticket*

◆ *Free between midnight until 4 am*

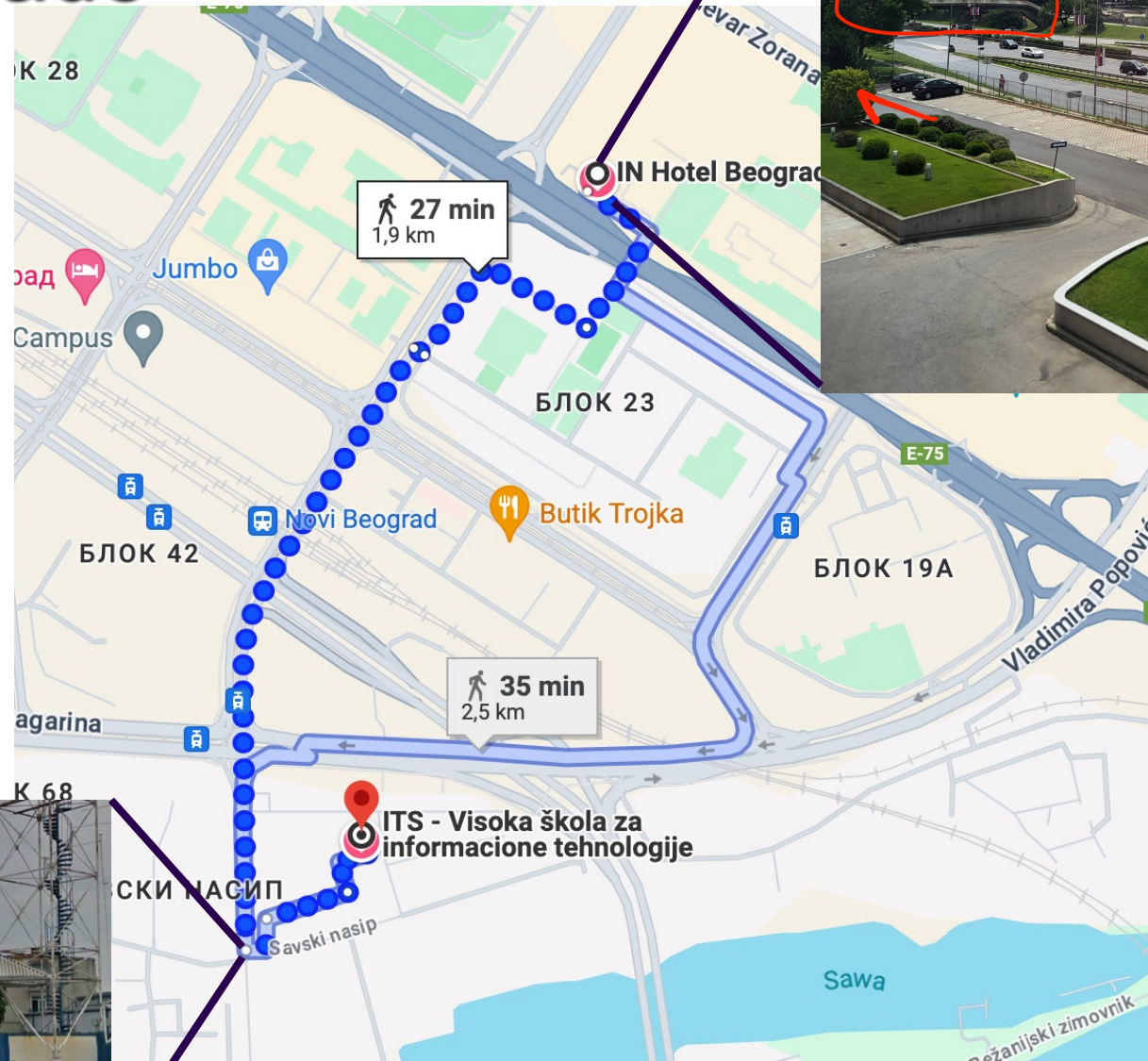
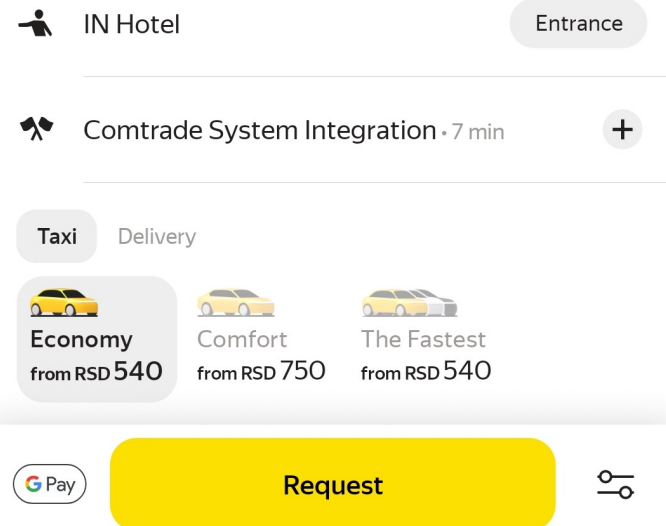
◆ Taxi

◆ **Yandex Go** app available in Play / AppStore

- ◆ It's possible to pay by card

Getting to ITS / Comtrade

- ◆ Don't forget your badge!
 - ◆ *Let's walk together*
 - ◆ *We leave the reception at 8:00*
- ◆ Taxi app:
Yandex Go -> ~550 RSD (4,7 EUR)



WhatsApp group

- ◆ Unofficial communication channel
- ◆ We recommend you to join the group
- ◆ Autojoin link:
 - ◆ <https://chat.whatsapp.com/CQaaykuHsQGKI8SBeil5xe>



The School site is on indico

- ◆ <https://indico.cern.ch/event/1377435/overview>

Thematic CERN School of Computing on Heterogeneous Architectures

Overview
Academic programme
Timetable (weekly)
Timetable (daily)
School campus
Practical information
└ Logistics
└ Fees & payment
└ Terms & Conditions
└ Laptop configuration
└ Accommodation
School guide
Lecturers
Organisers
tCSC Participants
School poster

The 14th **Thematic** CERN School of Computing (tCSC 2024) will take place on **June 9-15, 2024**. The theme of the school is "*Scientific Software for Heterogeneous Architectures*" - see the [academic programme](#) for more details.

This school is organized by [CERN](#) in collaboration with the [Information Technology School \(ITS\)](#), situated at the Comtrade Campus in Belgrade, Serbia. CSC students will have access to modern lecture rooms, labs and a sports hall as well as restaurants and cafeterias. The campus is situated in the new Belgrade area by the Danube river, only a short busride from the old city center of Belgrade

The School is aimed at postgraduate (i.e. minimum of Bachelor degree or equivalent) students, engineers and scientists with a few years' experience in particle physics, in computing, or in related fields. We welcome applications from all countries and nationalities.

Important Dates

- **Wednesday March 27** - applications deadline
- **Wednesday April 10** - invitations sent to the selected participants
- **Wednesday May 8** - registration fee payment deadline
- **Sunday June 9 - Saturday June 15** - the school

Sunday, 9 June 2024	Monday, 10 June 2024	Tuesday, 11 June 2024	Wednesday, 12 June 2024	Thursday, 13 June 2024	Friday, 14 June 2024	Saturday, 15 June 2024
	07:00 Breakfast	07:00 Breakfast	07:00 Breakfast	07:00 Breakfast	07:00 Breakfast	07:30 Breakfast
	08:45 Opening Session - Alberto Pace (CERN)	08:45 Writing parallel software - Sebastien Ponce (CERN)	08:45 Scientific computing on heterogeneous architectures	08:45 Performant programming for GPUs - Daniel Campora (NVIDIA)		09:00 Departures
	09:45 Preparing for the HL-LHC computational challenge - Danilo Piparo (CERN)	09:45 Modern programming languages for HEP - Sebastien Ponce (CERN)	09:45 Optimizing existing large codebase - exercise 1 - Sebastien Ponce (CERN)	09:45 Performant programming for GPUs - Daniel Campora (NVIDIA)	09:45 Design patterns and best practices - Daniel Campora (NVIDIA)	
	10:45 Announcements	10:45 Announcements	10:45 Announcements	10:45 Announcements	10:45 Announcements	
	11:00 Break	11:00 Coffee break	11:00 Coffee break	11:00 Coffee break	11:00 Coffee break	
	11:30 CPU Hardware Architecture and Evolution	11:30 Low-level Performance Optimization Guidelines - Guilherme Amadio (CERN)	11:30 Optimizing existing large codebase - exercise 2 - Sebastien Ponce (CERN)	11:30 Practical vectorization - Sebastien Ponce (CERN)	11:30 Programming for heterogeneous architectures - exercise	
	12:30 Performance Analysis on Modern CPUs - Guilherme Amadio (CERN)	12:30 CPU Architecture and High Performance - exercise 2	12:30 Student's lightning talks	12:30 Practical vectorization - exercise - Sebastien Ponce (CERN)	12:30 Programming for heterogeneous architectures - exercise	
	13:30 Lunch	13:30 Lunch	13:20 School photo 13:30 Lunch	13:30 Lunch	13:30 Lunch	
	14:30 CPU Architecture and High Performance - exercise 1	14:30 Study or sports time	14:30 Excursion to the Nikola Tesla Museum	14:30 Study time or sports	14:30 Exam	
15:30 Registration at IN Hotel	15:30 Break				15:45 Coffee break	
	16:00 Transport to the old town of Belgrade	16:00 Coffee break		16:30 Coffee break	16:20 Closing Session	
17:00 Welcome and introduction	17:00 Scavenger Hunt in old Belgrade	16:30 Optimizing existing large codebase - Sebastien Ponce (CERN)		17:00 Programming for heterogeneous architectures - exercise		
17:20 Self presentations		17:30 Data-Oriented Design - Guilherme Amadio (CERN)		18:00 Programming for heterogeneous architectures - exercise	17:20 Free time	
18:00 Welcome drink at the Hotel Roof top bar		18:30 Study or sports time				
19:30 Welcome Dinner - IN Hotel	19:30 Dinner in the old town of Belgrade	19:30 Dinner at ITS	19:30 Dinner in the old town of Belgrade	19:30 Dinner Hotel IN	18:00 CERN outreach	
		21:00 Managing Large Databases: Challenges and Lessons			19:30 Closing dinner at ITS	

Sports at this school...



Important information

- ◆ Local currency is RSD – Serbian Dinars

- ◆ 100 RSD is 0,85 EUR

You can:

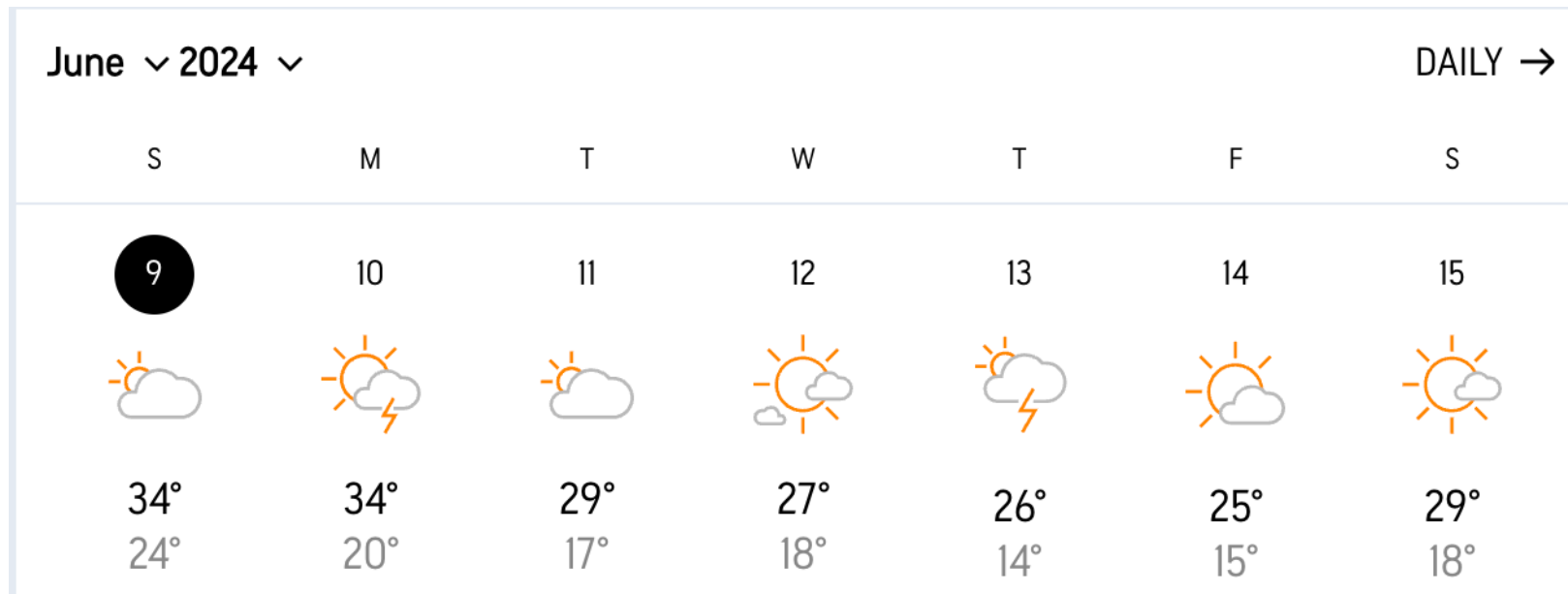
Divide by 118

or use a rough estimate of

100 RSD is... ~ ~~100~~ EUR

Important information

- ◆ Drink lots of water!



- ◆ The hotel rooms and class rooms have A/C

WiFi

- ◆ At Hotel:
 - ◆ IN-HOTEL
- ◆ At the school:
 - ◆ Information will be provided later

Self-presentations

- ◆ One minute each
- ◆ People can volunteer to present themselves without slides at the end

Later today...

- ◆ Drinks at the rooftop bar
- ◆ Dinner after

Enjoy the school!

