



Welcome to the Department!

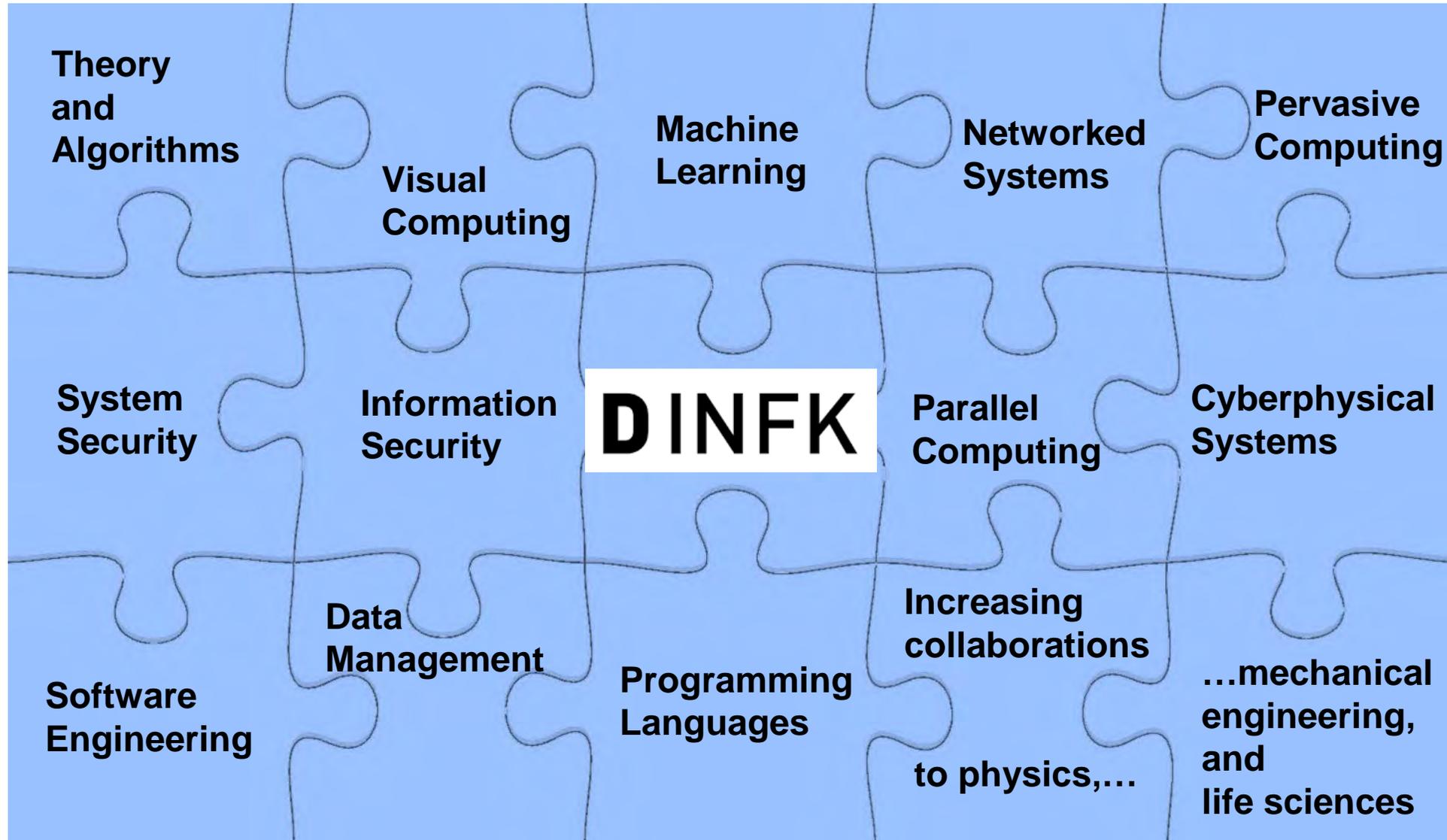
**Prof. Dr. Adrian Perrig**  
Deputy Director of Studies

15 September 2025

# The CS (D-INFK) Faculty



# Broad Topics in Research and Education



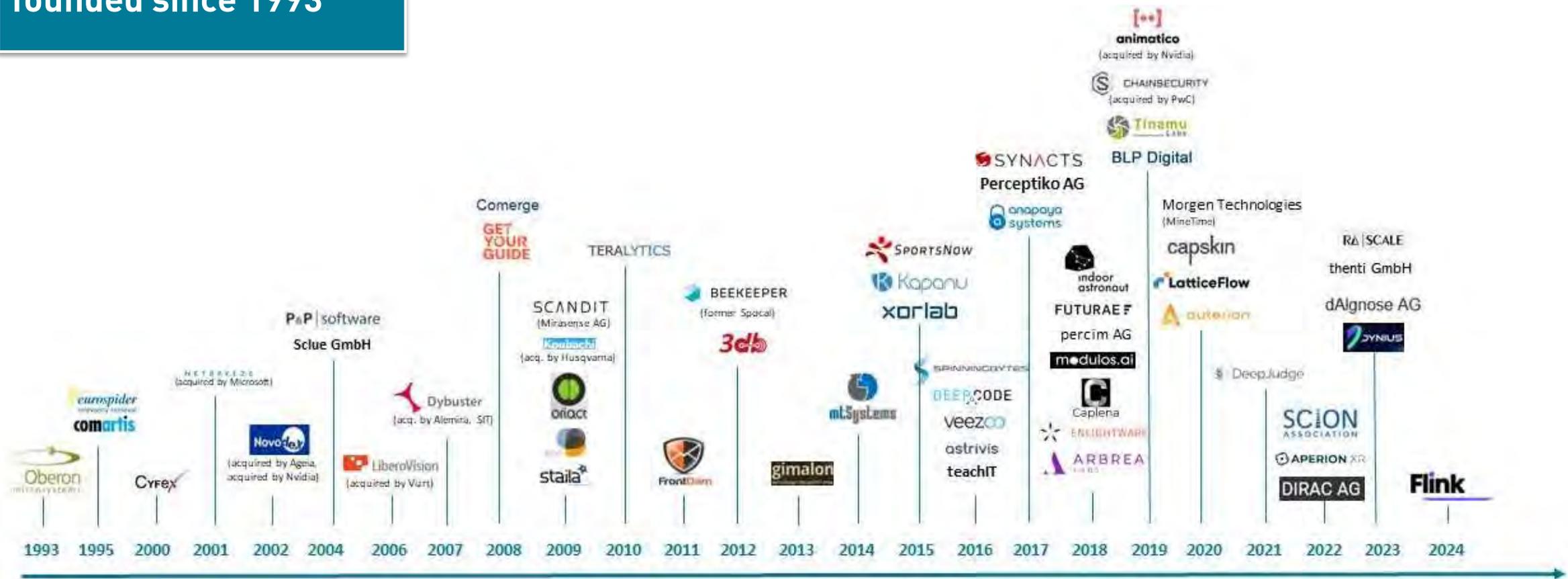
# Top-Ranked CS Departments Worldwide



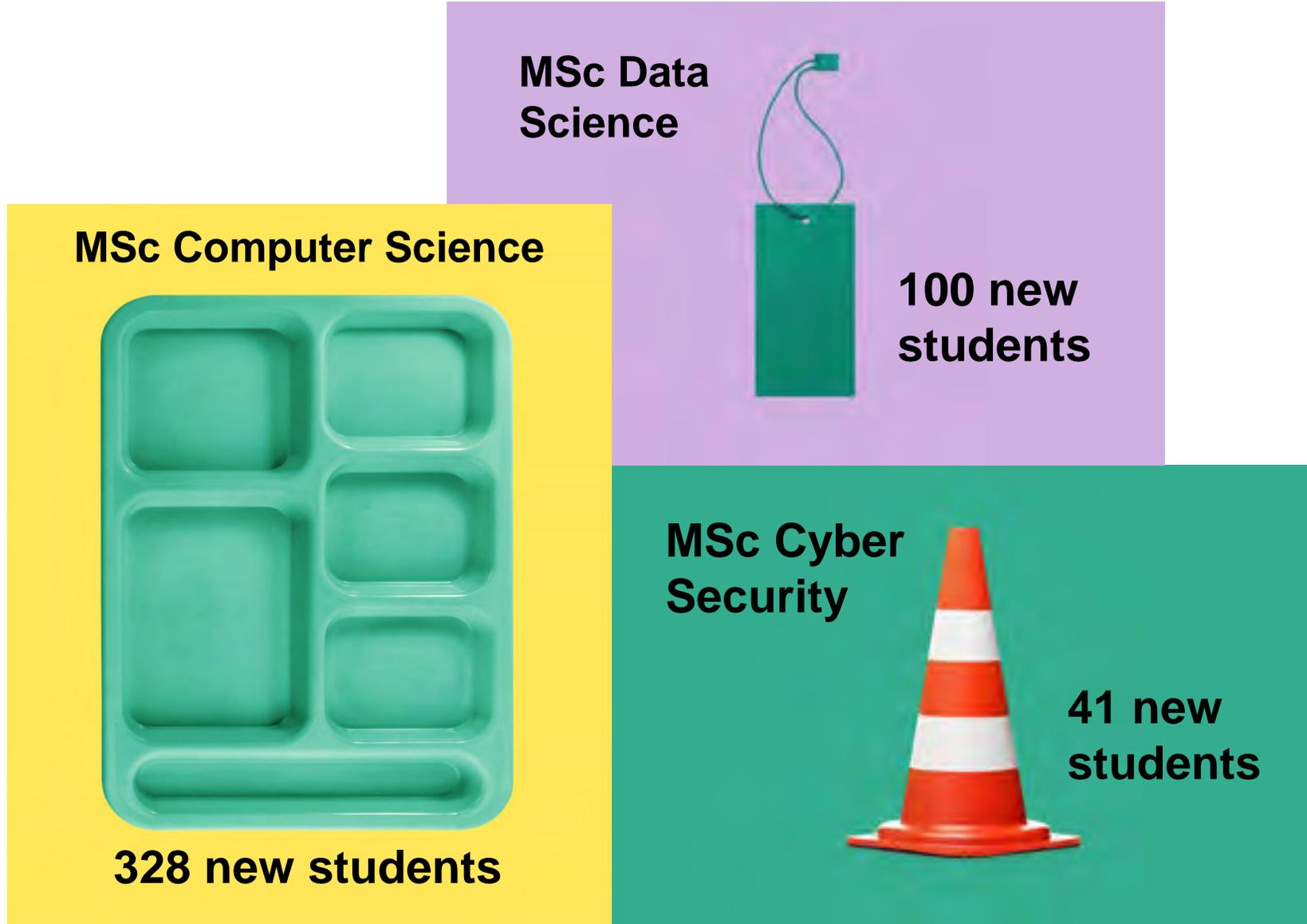
Rank 2025	Institution	Country
1	University of Oxford	United Kingdom
2	University of Cambridge	United Kingdom
3	Massachusetts Institute of Technology	United States
4	<b>ETH Zurich</b>	<b>Switzerland</b>
5	Stanford University	United States

# Start Your Own Company

58 D-INFK Spin-offs  
founded since 1993



# D-INFK Master's Programmes



# Some Quick Advice

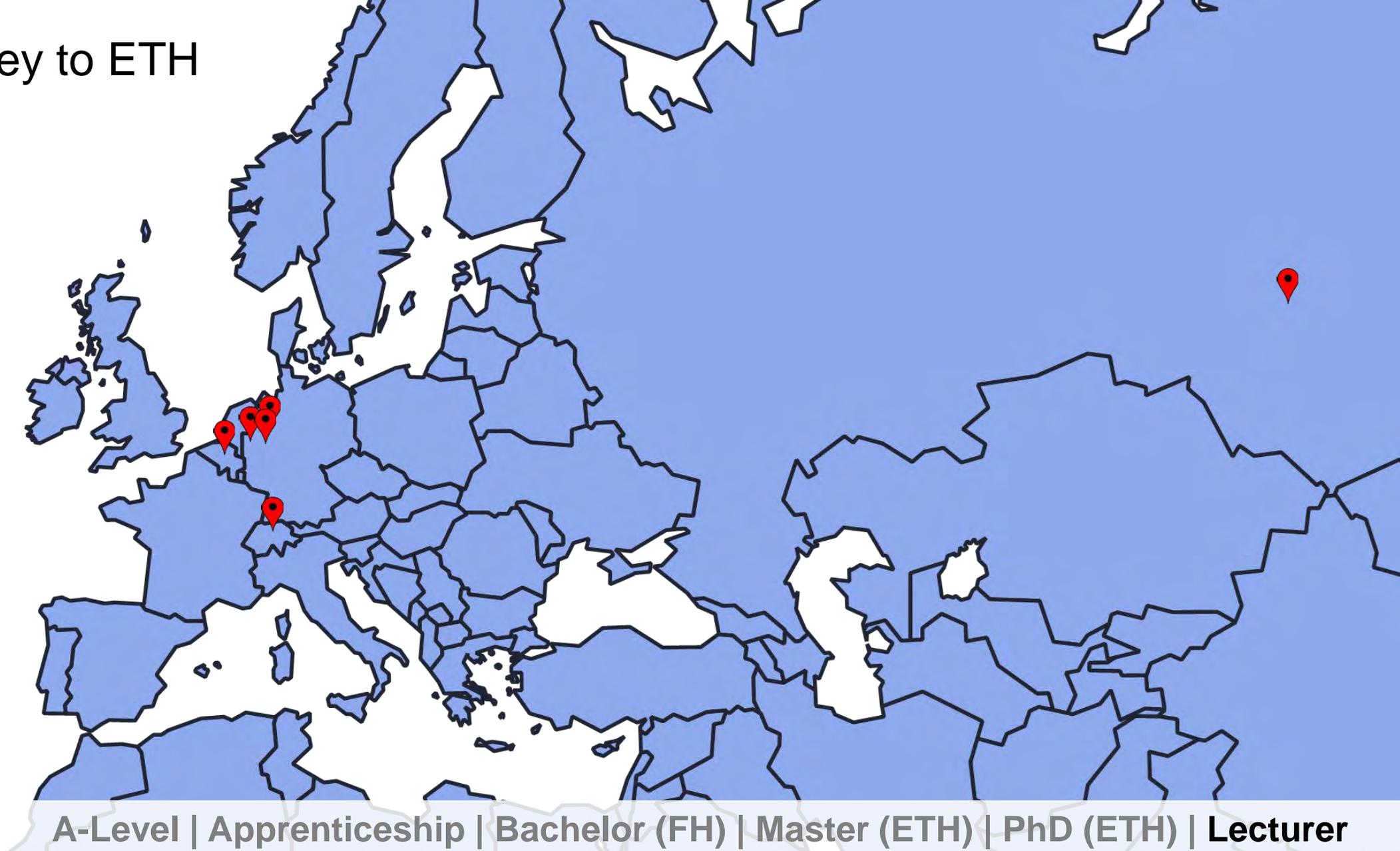
- Take advantage of the unique opportunity of studying at ETH
- Attend classes, interact with your peers, TAs, and faculty
- Work hard, practice self-reflection, seek help when needed
- Make this not only a degree, but a major step in your life and career
- Stay positive and have fun!

# Introduction to ETH Master's in CS

**Dr. Malte Schwerhoff**  
Lecturer & Educational Developer



# My Journey to ETH



A-Level | Apprenticeship | Bachelor (FH) | Master (ETH) | PhD (ETH) | **Lecturer**

# Let's Get Started



# Studies Administration

- Study related administrative issues
- Issues concerning examinations
- Transcripts, degrees, ...
- Issues concerning military service (Swiss only)

↳ [studiensekretariat@inf.ethz.ch](mailto:studiensekretariat@inf.ethz.ch)

# Who is Who



**Prof. Thomas Hofmann**  
Department Head



**Prof. Dennis Hofheinz**  
Director of Studies



**Michaela Zimmermann**  
**Lena Tichy**  
Studies Administration



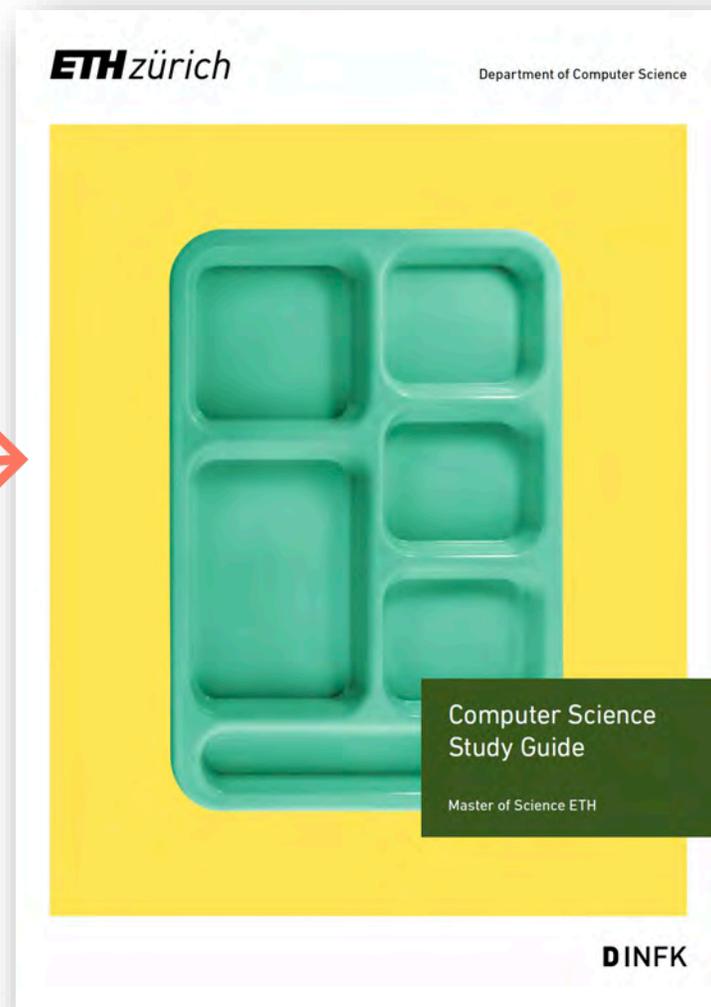
←  
*and  
several  
others*

# Master's Programme in Computer Science





*Take a  
look  
inside!*



# Credit System

- ECTS credits (European Credit Transfer System)
- Course completed successfully
  - ↳ then full number of credits is awarded (none otherwise)
- 30 credits per semester
  
- ETH's master's programme in CS has 120 credits
  - Expected duration: 4 semesters
  - Max. duration: 8 semesters (including Master's thesis)



# Grading System

6 Very good



5 Good

4 Sufficient

3 Insufficient

2 Poor

1 Very poor



- **Pass:** grade  $\geq 4.0$
- **Fail:** grade  $< 4.0$
- Grading scale: 0.25

## **Repetition of exams:**

Every examination can be repeated *once*

# Master's Programme Structure

Master ETH Zurich in Computer Science	120
Major	26
Core Courses	16
Core Electives	
Minor	18
Inter Focus Courses	16
Seminar	2
Practical Work	8
Free Elective Courses	
Science in Perspective	2
Master's Thesis	30

## Choose one of five majors:

- Data Management Systems
- Machine Intelligence
- Secure & Reliable Systems
- Visual & Interactive Computing
- Theoretical Computer Science

**Courses per major:** see “Core courses catalogue” PDF on the Master’s programme’s web site



# Master's Programme Structure

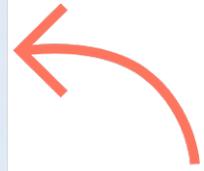
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plus 10 credits from  
Core Courses or  
Core Electives

# Master's Programme Structure

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plus 10 credits from  
Core Courses or  
Core Electives

$\Sigma = 102$ , plus 18 credits from all categories  
except seminars, practical work, thesis

# Majors

Master ETH Zurich in Computer Science	120
Major	26
Core Courses Core Electives	16
Minor	18

- Must choose major within **first four** semester weeks
- Major may be changed **once** (no study duration extension)
- Choice is made via [mystudies.ethz.ch](https://mystudies.ethz.ch)

# Permitted Combinations of Majors & Minors

<b>Majors:</b>	<b>Minors:</b>								
	Computer Graphics	Computer Vision	Data Management	Information Security	Machine Learning	Networking	Programming Languages & Software Engineering	Systems Software	Theoretical Computer Science
Data Management Systems	✓	✓	✗	✓	✓	✓	✓	✗	✓
Machine Intelligence	✓	✗	✓	✓	✗	✓	✓	✓	✓
Secure and Reliable Systems	✓	✓	✓	✗	✓	✓	✗	✓	✓
Visual and Interactive Computing	✗	✗	✓	✓	✓	✓	✓	✓	✓
Theoretical Computer Science	✓	✓	✓	✓	✓	✓	✓	✓	✗

# Minors

- Courses count for specific minors
- At end of MSc, chosen courses must sum up to a suitable minor
- Thus:
  - Minor can be “changed” any time
  - **Your responsibility** to ensure choice yields suitable minor

## 252-0535-00L Advanced Machine Learning

Catalogue data	Performance assessment	Learning materials	Courses	Groups	Restrictions	Offered in
Programme		Section				
CAS in Computer Science		Focus Courses and Electives				
Computational Biology and Bioinformatics Master		Data Science				
Computer Science Master		Minor in Data Management				
Computer Science Master		Minor in Machine Learning				
Computer Science Master		Minor in Theoretical Computer Science				

▶ ▶ ▶ Minor in Computer Vision	
Number	Title
263-3210-00L	Deep Learning  
263-5902-00L	Computer Vision 



# Inter Focus Courses - “The Labs”

- You need  $\geq 16$  ECTS from labs
- Four labs offered, each worth 8 credits → two labs
  - Autumn semester: Algorithms Lab, Information Security Lab
  - Spring semester: Computational Intelligence Lab, Advanced Systems Lab
- Repetition *can* require re-enrolling
  - ↳ repetition only possible a year later
- At most four attempts in total
  - ↳ **failing more than two attempts means dropping out**
- Labs are difficult and mean a lot of work during the semester
- **Failed labs are the main reason for drop-outs**
- Advice: Take *one* lab *each* semester – and allocate enough time
- Strong recommendation: Pass *at least* one lab within one year

## Algorithms Lab HS2025

see also the corresponding [entry in the course catalogue](#)

### Contact

For questions on exercises use the forums on [moodle](#). For administrative questions or to report technical problems, use [algotab@lists.inf.ethz.ch](mailto:algotab@lists.inf.ethz.ch).

### Lecturers

[Manuela Fischer](#),  
[Michael Hoffmann](#) (contact),  
[David Steurer](#)

### Assistants

[Yassir Akram](#), Lorenzo Battini, Eric Bill, Daniel Bociat, [Ahmed Bouhoula](#), Christoph Grunau, Tilman de Lanversin, Edem Memetov, Antti Röyskö, Manuel Wettstein, Tianxiang Xia

### Time & Place

	Monday	Tuesday	Wednesday	Thursday	Friday
14-16	Problem of the Week Sep 22-Dec 15				
16-18		Assessments Oct 14-Dec 09 CHN D42 / ML H34.3	Tutorial Sep 17-Dec 10 CAB G11	Assessments Oct 16-Dec 11 CAB G37 / ML H34.3	Consulting Sep 19-Oct 10 CAB G59
					Assessments Oct 17-Dec 12 CAB G39

The orange slots (individual performance assessments) are by appointment only. The blue slots (consulting hours) are completely optional and on demand only. Attendance/participation in the green slots (PotW and tutorials) is recommended. For more details see the section “Organization” below.

### Objective

The objective of this course is to learn how to solve a problem given by a textual description. This includes appropriate problem modeling, choice of suitable algorithms, and a working implementation in Python.

# Practical Work

- Individual semester project of 8 ECTS, **or** a lab course (not “The Labs”; see course catalogue for details)
- Supervised by a professor from D-INFK
- Graded as pass/fail
- Find potential projects by
  - Talking to professors and their research groups
  - Checking department’s/institutes’/ professors’ websites

Further information can be found in the PDF [Memo Practical Work](#).

## Spring Semester 2025

Course units	Catalogue data	Courses
Number	Title	ECTS
252-0570-00L	<a href="#">Game Programming Laboratory</a> ⓘ ⚠	10 credits
263-0650-00L	<a href="#">Practical Work</a> ⓘ ⚠	8 credits

### Game Programming Laboratory

The goal of this course is the in-depth understanding of the technology and programming underlying computer games. Students gradually design and develop a computer game in small groups and get acquainted with the art of game programming.

[Schedule](#)

[Project structure](#)

[FAQ](#)

[Games](#)

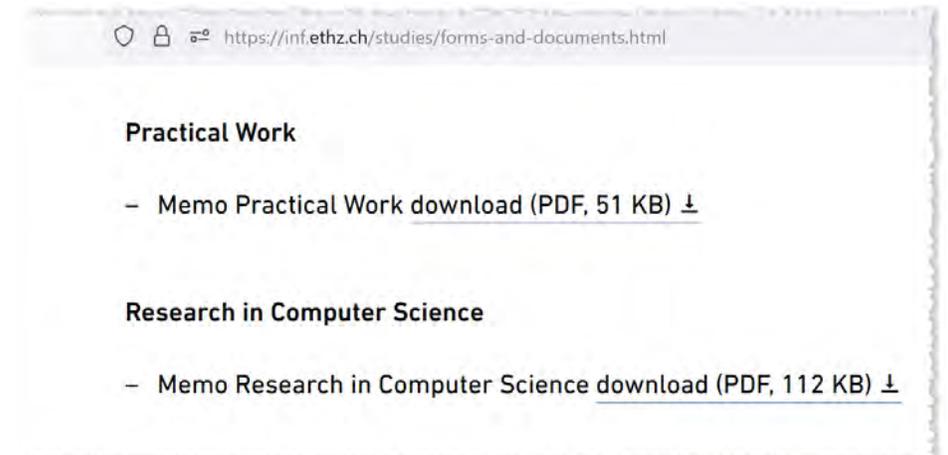


## Game Programming Laboratory

# Free Elective Courses

- “Free” as in “see the fine-print”
  - Master’s courses from ETH Zurich, EPFL, or University of Zurich
  - Must be primarily related to computer science
  - See Study Guide for details; talk to Study Administrations
- **At most one mandatory focus course** (“Kernfächer”) from our Bachelor's curriculum
  - **No elective courses** from our Bachelor's curriculum
- A research project in computer science may be conducted (5 ECTS). There are specific prerequisites for this registration, see PDF [Memo Research in Computer Science](#).

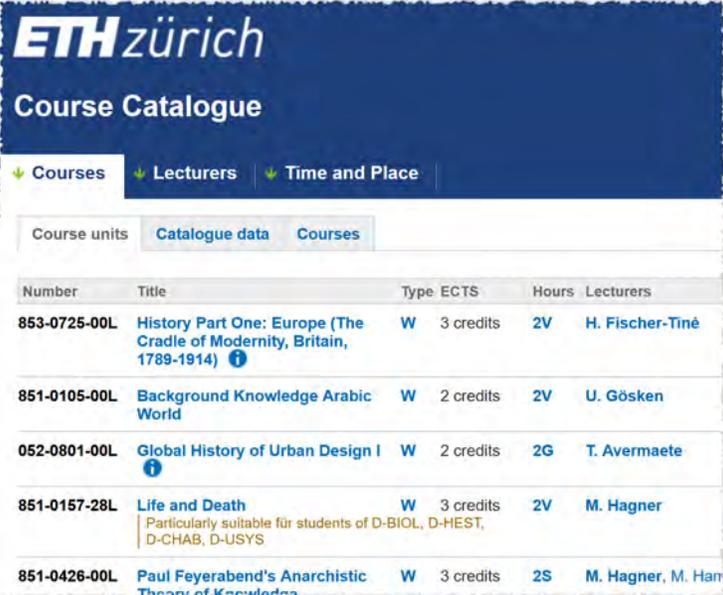
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Science in Perspective	2
Master's Thesis	30



# Science in Perspective

- Must obtain **two ECTS at D-GESS**  
(Department of Humanities, Social and Political Sciences)
- Course catalogue: see VVZ, programme “Science in Perspective”
- At most **six credits** can be accredited in this category
- At most **three credits** through language courses  
(including those obtained in your ETH Bachelor’s programme)
- Language courses offered by the language centre **that are explicitly accredited** by D-GESS have an 851-XXXX-XX course number

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**ETH zürich**  
Course Catalogue

↓ Courses   ↓ Lecturers   ↓ Time and Place

Course units   Catalogue data   Courses

Number	Title	Type	ECTS	Hours	Lecturers
853-0725-00L	History Part One: Europe (The Cradle of Modernity, Britain, 1789-1914) ⓘ	W	3 credits	2V	H. Fischer-Tiné
851-0105-00L	Background Knowledge Arabic World	W	2 credits	2V	U. Gösken
052-0801-00L	Global History of Urban Design I ⓘ	W	2 credits	2G	T. Avermaete
851-0157-28L	Life and Death Particularly suitable for students of D-BIOL, D-HEST, D-CHAB, D-USYS	W	3 credits	2V	M. Hagner
851-0426-00L	Paul Feyerabend's Anarchistic Theory of Knowledge	W	3 credits	2S	M. Hagner, M. Han

# Interlude: PAKETH





# PAKETH



- New academic calendar | Automatic exam enrolment | Regulatory harmonisations | ...
- Will probably affect you only if you do not graduate within 4 semesters
- If interested: see the [PAKETH website](#) for details

# Getting Started: Step by Step



# General Information

- Master's programme's web site
- Specifically:
  - Study Guide
  - Core Course Catalogue
- List of courses: [vvz.ethz.ch](http://vvz.ethz.ch)
- Fellow students
- Study Administration
- Your tutor
- ...

Homepage > Studies > Master's Programmes > Computer Science

## Master in Computer Science



The Master's programme in computer science offers a profound and in-depth education in the core areas of computer science. The wide range of available courses and the flexible structure allow students to tailor their studies to meet their particular interests, needs, and goals.



# Step 1: Choose Major

- Choose major on myStudies: [mystudies.ethz.ch](https://mystudies.ethz.ch)
- **Within first four** semester weeks
- Remember: can only be changed **once**





## Step 2: Your Personal Study Plan

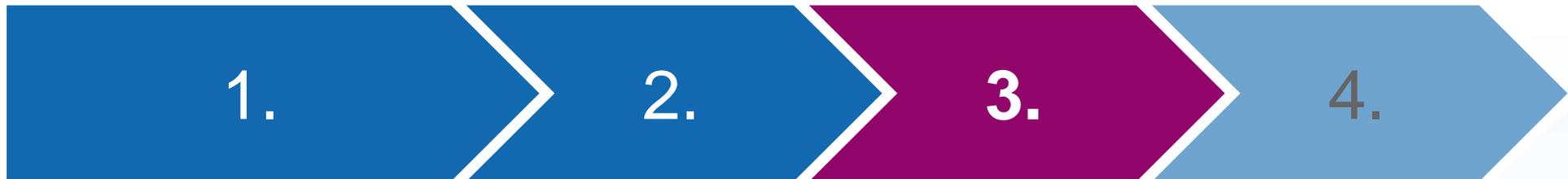
Roughly **plan** your studies:

- Which courses sound interesting? → Course list: [vvz.ethz.ch](https://www.vvz.ethz.ch)
- When is which course offered? → Distribute workload across semesters
- Which minors could I achieve with these courses?
  - See PDF on D-INFK's MSc website (or VVZ)
  - Consult study administration or tutor, if necessary



## Step 3: Study

- Enrol for courses: [mystudies.ethz.ch](https://mystudies.ethz.ch)
- Revise your study plan, if necessary





# Step 4: Thesis

- Duration: at most 6 months
- Full-time → taking courses in parallel is not recommended
- Admission requirements
  - All additional requirements completed
  - Major completed (26 credits)
  - Inter Focus Courses (“the labs”, 16 credits) completed
  - At most 8 credits missing in total (besides thesis’ credits)

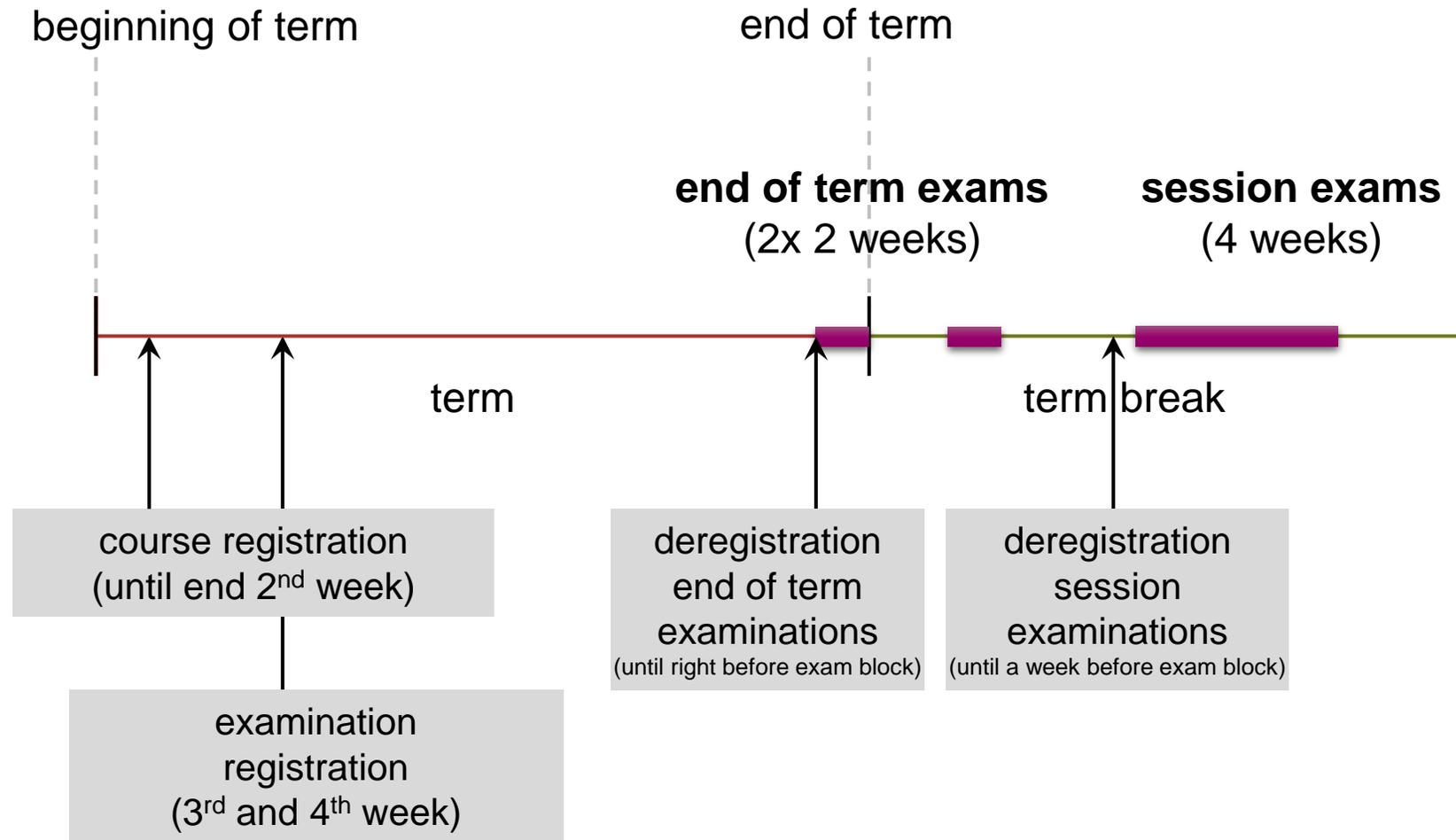


# Semesters & Examinations

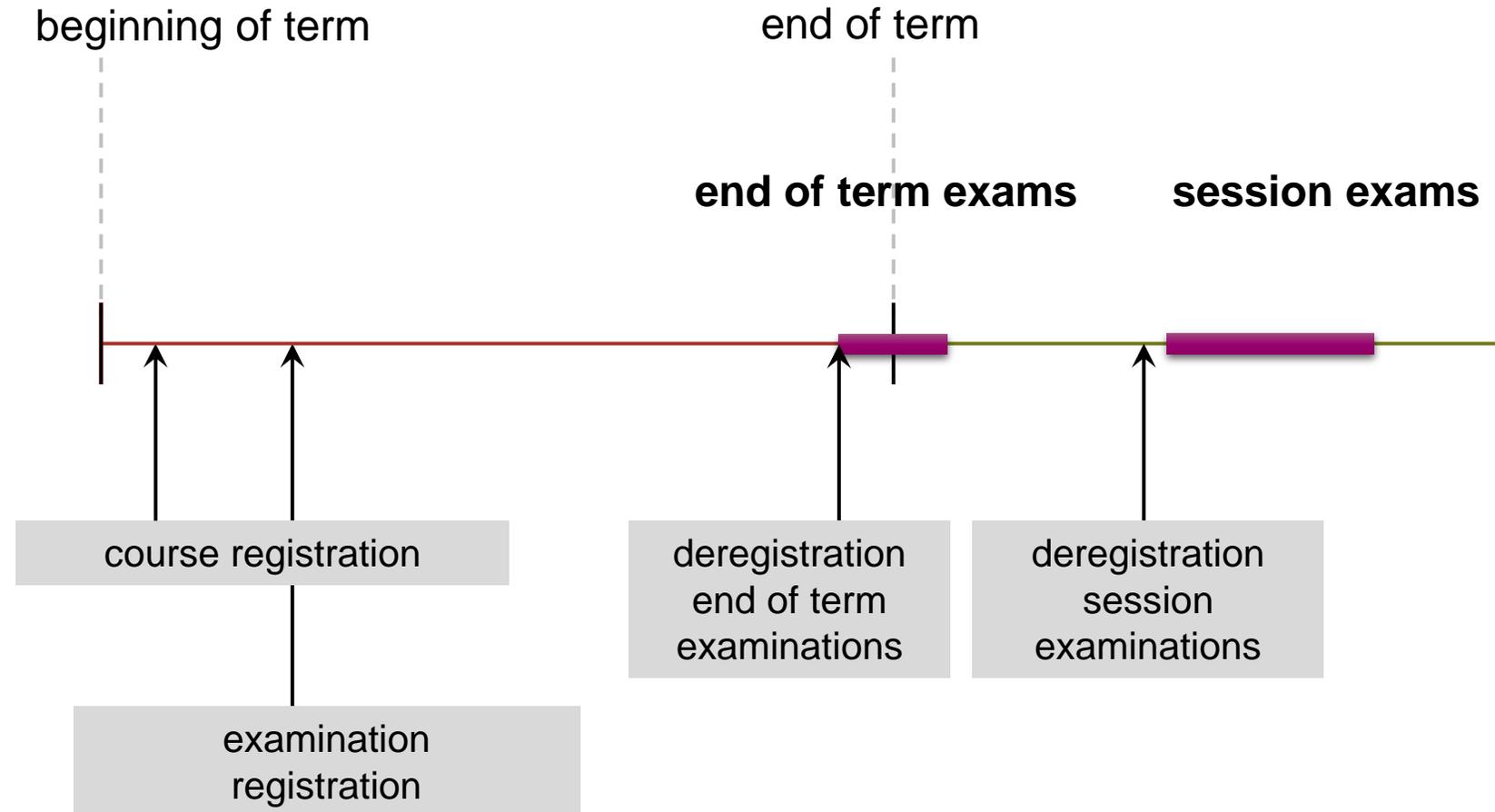




# Autumn Semester



# Spring Semester



# Deadline Announcements

- Important *deadlines* (course registrations, exam registration and deregistration, etc.) are *always* announced ahead of time via email

↳ **Check your ETH email address regularly**

- Also see website, e.g. for
  - Dates and deadlines
  - Academic calendar

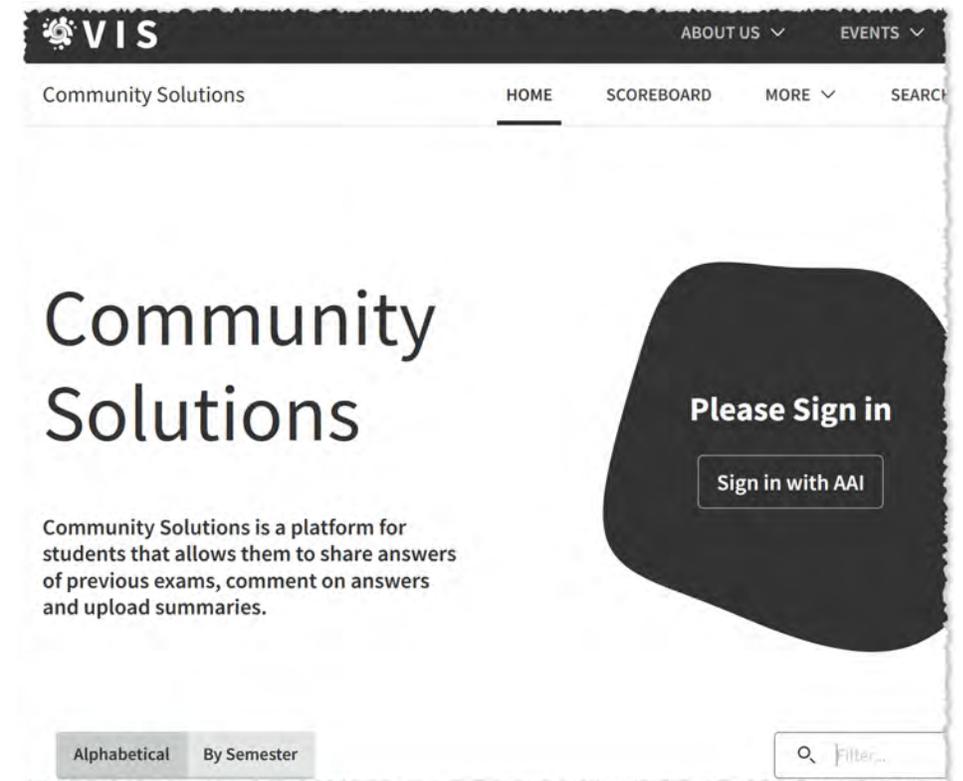
## Overview semester dates

2025

Information days for final-year secondary school students	Wednesday, 03.09.2025 - Thursday, 04.09.2025	Show +
Start Autumn semester	Monday, 15.09.2025	Show +
Welcome for new students	Monday, 15.09.2025	Show +
"Knabenschiessen" (local Zurich holiday)	Monday, 15.09.2025	Show +
Classes begin	Tuesday, 16.09.2025	
Deadline exam enrolment	Sunday, 12.10.2025	Show +
Doctoral awards ceremony	Friday, 24.10.2025	
Dies Academicus ("ETH Day")	Saturday, 22.11.2025	Show +
Polyball (annual student prom)	Saturday, 29.11.2025	Show +
End of Autumn semester	Friday, 19.12.2025	Show +
Christmas break	Wednesday, 24.12.2025 - Sunday, 04.01.2026	Show +

# Preparing Examinations

- Solve the *exercises* during the semester
- Solve *old examinations*:
  - Available from the student body, i.e. VIS
  - Maybe also from courses' websites
- *Oral examinations*: Get minutes of former examinations from VIS
- If you have *questions*, ask your fellow students or the assistants



# Bring Your Own Device

- All newly entering students must possess a laptop meeting certain (minimum) requirements
  - May also be used for
  - Your hardware, your responsibility
- Details: <https://ethz.ch/students/en/studies/byodstudium.html>

## Bring Your Own Device in Study Programmes

On this page you will find all the information you need about Bring Your Own Device for students. An overview of the Bring Your Own Device obligation at ETH Zurich and the various information pages on this topic can be found on the [BYOD overview page](#).

**From autumn semester 2024, Bring Your Own Device (BYOD) will be mandatory for all students starting a new degree programme at ETH Zurich. A personal laptop meeting the minimum requirements described below will be part of the basic equipment of all students starting a new degree programme at ETH Zurich.**

### Mandatory BYOD policy

Mobile computers are mandatory for all students starting a new degree programme in the autumn semester 2024. This applies to all levels: Bachelor's degree programme, Master's degree programme, continuing education teacher training as well as special students. Students on joint Master's degree programmes, doctoral students and exchange students are also affected if they are taking courses in their study programmes for the first time. The mandatory BYOD policy also applies to students progressing to a consecutive or non-consecutive Master's degree programme, changing degree programmes or re-enter ETH Zurich in the autumn semester 2024.

### Technical minimum requirements

# Last but not Least: Starting Times

- Classes *typically* start a quarter past the full hour
- Example: Class stated to take place from 8 till 10
  - Starts at 08:15
  - Usually has a break from 09:00-09:15
  - Ends at 10:00
- Above does *not* apply to
  - Exams, meetings, etc.
  - Hönggerberg (ETH's “remote” campus)

## Lecture times

Lectures generally last for 45 minutes. The left column of the table indicates the times published in the course catalogue.

Entries in Course Catalogue/ Roomreservation	Zentrum All buildings	Hönggerberg HIF, HIL	Hönggerberg All other buildings
08:00–09:00	08:15–09:00	08:00–08:45	07:45–08:30
09:00–10:00	09:15–10:00	08:50–09:35	08:45–09:30
10:00–11:00	10:15–11:00	09:45–10:30	09:45–10:30
11:00–12:00	11:15–12:00	10:45–11:30	10:45–11:30
12:00–13:00	12:15–13:00	11:45–12:30	11:45–12:30
13:00–14:00	13:15–14:00	12:45–13:30	12:45–13:30
14:00–15:00	14:15–15:00	13:45–14:30	13:45–14:30
15:00–16:00	15:15–16:00	14:45–15:30	14:45–15:30
16:00–17:00	16:15–17:00	15:45–16:30	15:45–16:30
17:00–18:00	17:15–18:00	16:45–17:30	16:45–17:30
18:00–19:00	18:15–19:00	17:45–18:30	17:45–18:30
19:00–20:00	19:15–20:00	18:45–19:30	18:45–19:30

All the best for your studies!



# CS Master's at ETH – A Survival Guide

**Utkarsh Gupta**  
15th September, 2025



# DISCLAIMER

The following tips and tricks are based on my experience. Please reach out to others and gather their opinions for a more balanced perspective!

# Who am I?

- Utkarsh (UK)
- Originally from India
- B.Tech. in Electrical Engineering with Dual Minors in Computer Science at Indian Institute of Technology Kanpur (IITK)
- Currently 3rd semester M.Sc. Computer Science
- Major Machine Intelligence, Minor Information Security
- Part of the VIS MoEB Committee



# What is VIS?



- **VIS** = Verein der Informatikstudierenden (a.k.a. the CS student association).
- We run tons of events – check out [vis.ethz.ch](http://vis.ethz.ch)
- Free coffee and beer in CAB E32. Yes, really.
- **MoEB Committee**: Organizes events especially for Master students without an ETH Bachelor – that's most of you!
- Shoutout to the **Master's Welcome Weekend**, do sign up for a fun and exciting weekend!



# Finding a place in Zürich

- Finding housing in Zurich depends on your connections. If you are looking for a flat, make sure to tell all your friends about it.
- Popular Student Accommodations: StudentVillage, LivingScience, JUWO, WOKO, WFSS
- For questions about housing, contact ETH Housing Office ([wohnen.ethz.ch](http://wohnen.ethz.ch)).





# Getting around in Zürich

- PubliBike for getting around on a bike
- Use Friends pass if you plan on doing a trip with your friends
- HalbTax (Half-Fare) & Night GA can be helpful if you travel with SBB often
- E-Link for commute between Zentrum Campus and Hönggerberg Campus





# Non-ETH related advice

- [Papperla Pub](#): Student bar, Wednesday from 6pm at CAB D 21.
- Events: VIS events, ESF, Street Parade, Polyball, and many more. Zurich knows how to have fun.
- Nature: Lake Zurich and the Limmat are perfect for summer days. Hiking is an unofficial national sport here.
- ETH/UZH App: Check Mensa menus before committing. Also useful for campus events.
- ASVZ App: Access to gyms, classes, and sports – all included in your semester fee.
- Free/Cheap Stuff: Riccardo, Tutti, Facebook Marketplace, and Telegram groups.





# Advice related to study program

- Take advantage of the program's flexibility by taking a semester off for internships or adjusting your course load each semester.
- Avoid taking more than 30 credits, especially in your first semester.
- Tailor your study plan to fit your future career goals.
- Try completing lab courses early but avoid taking two labs in one semester.
- Avoid the Machine Intelligence major if your math skills aren't strong.
- Don't be afraid to take Security courses even if you lack experience in cryptography or CTFs.
- Choose your project partners *very* carefully. 😊



# Advice related to study program - Continued

- [CourseReview.ch](#): See what other students think before choosing courses.
- Semester projects can lead to RA jobs, a thesis, or even a PhD – pick topics you actually enjoy.
- Balance is key: mix exams, projects, and courses across the semester.
- Find a study space and schedule that *actually* work for you.
- Use session breaks wisely – travel, rest, internships... decompressing matters.
- Plan your credits carefully – requirements differ by category. Use this handy sheet to stay on track. Link: [CS MSc ECTS Sheet](#)

# Helpful Links



VIS-Website



ETH-App  
(Mensa, Events,...)



Erstsemestrigenfest



ETH Analytics Club



ASVZ



D-INFK  
Discord Server



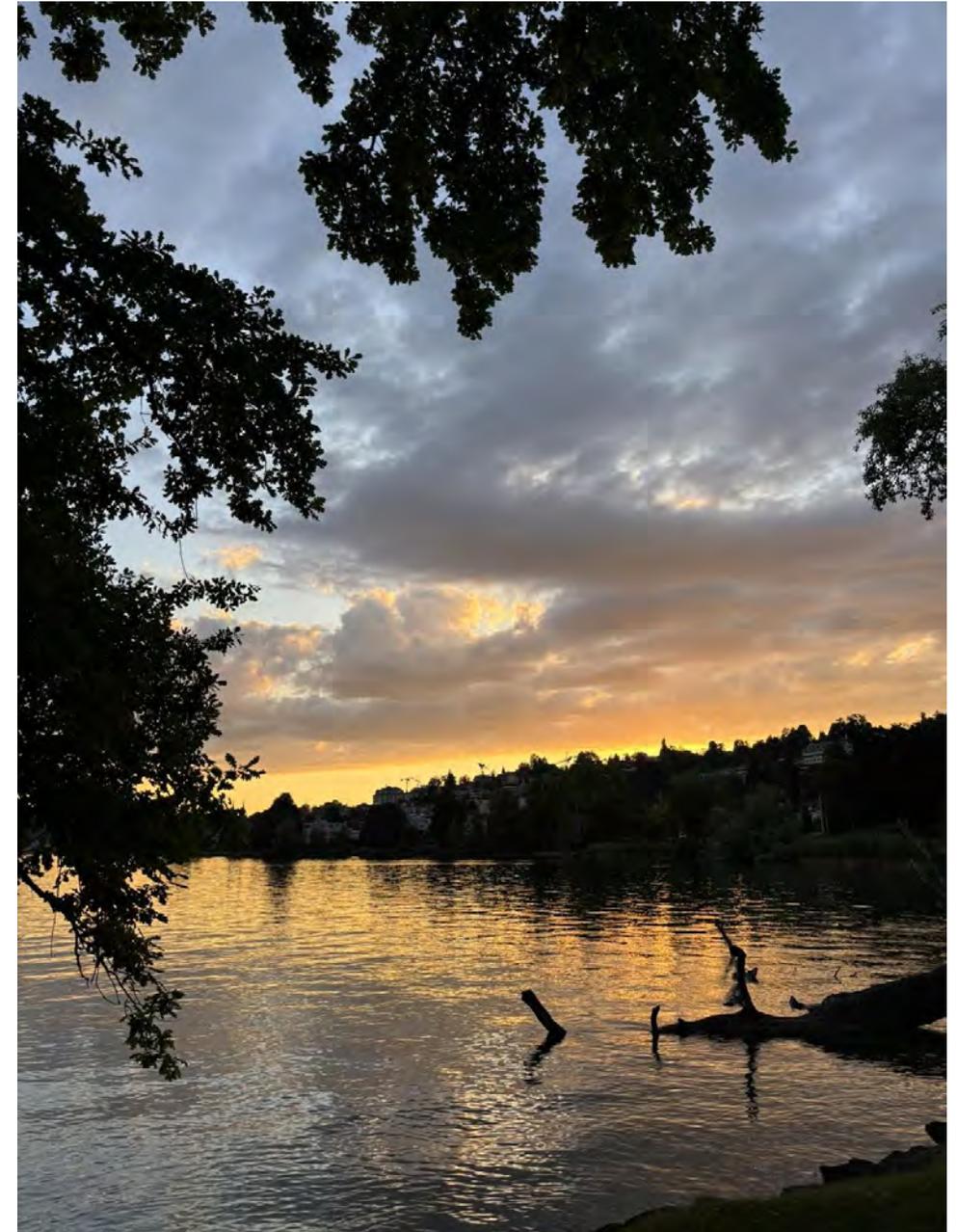
Polyball



ETH Entrepreneur Club

# TL;DR

- VIS is your go-to student association – get involved!
- Don't burn out – pace yourself, not your CPU.
- Everyone's path is different – listen to your own needs.
- Ask for help. Seriously, no one expects you to know everything.
- Be kind. ETH can be tough, community makes it better.
- (Optional, but smart): HalbTax, NightGA – save money on travel.
- **Jobs?** Look into RA/TA positions or ETH Juniors.
- And don't forget: you're living in one of the most beautiful cities in one of the most beautiful countries in the world. Enjoy it! 😊



# Welcome to ETH Zürich!

Where time is a segmentation fault, deadlines fork endlessly, and the AI models judge you silently from the GPU cluster.

Abandon hope, embrace caffeine, and prepare to question your life choices in three languages.

Wishing you a great start at ETH Zürich!

Here's to new beginnings and exciting challenges ahead!



# CSNOW - Network of Women in Computer Science ETH

Sophia Boyer and Sarah Kuhn

Zurich, 15.09.2025



# Unser Team



Prof. Dr. Julia Vogt



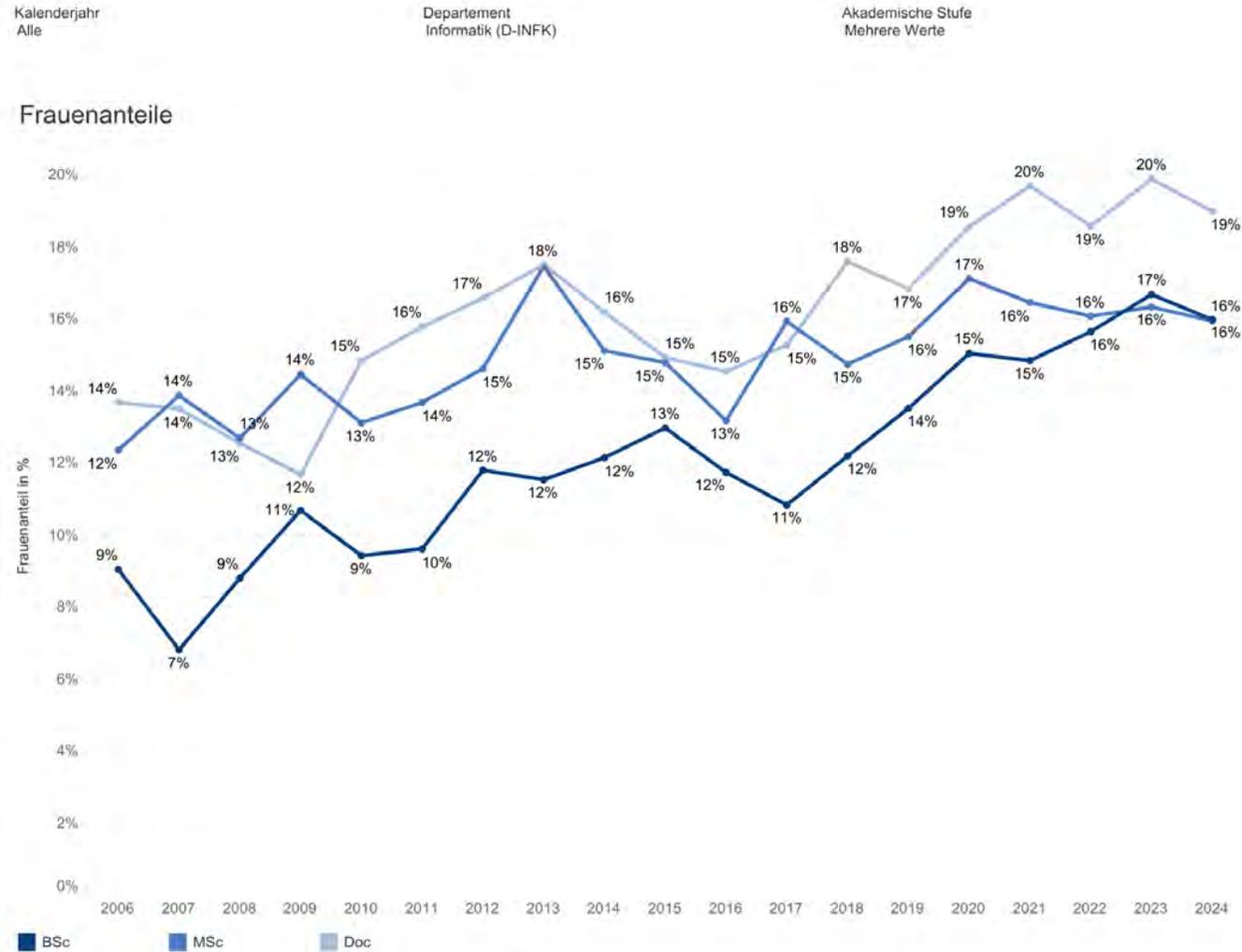
Co-leaders



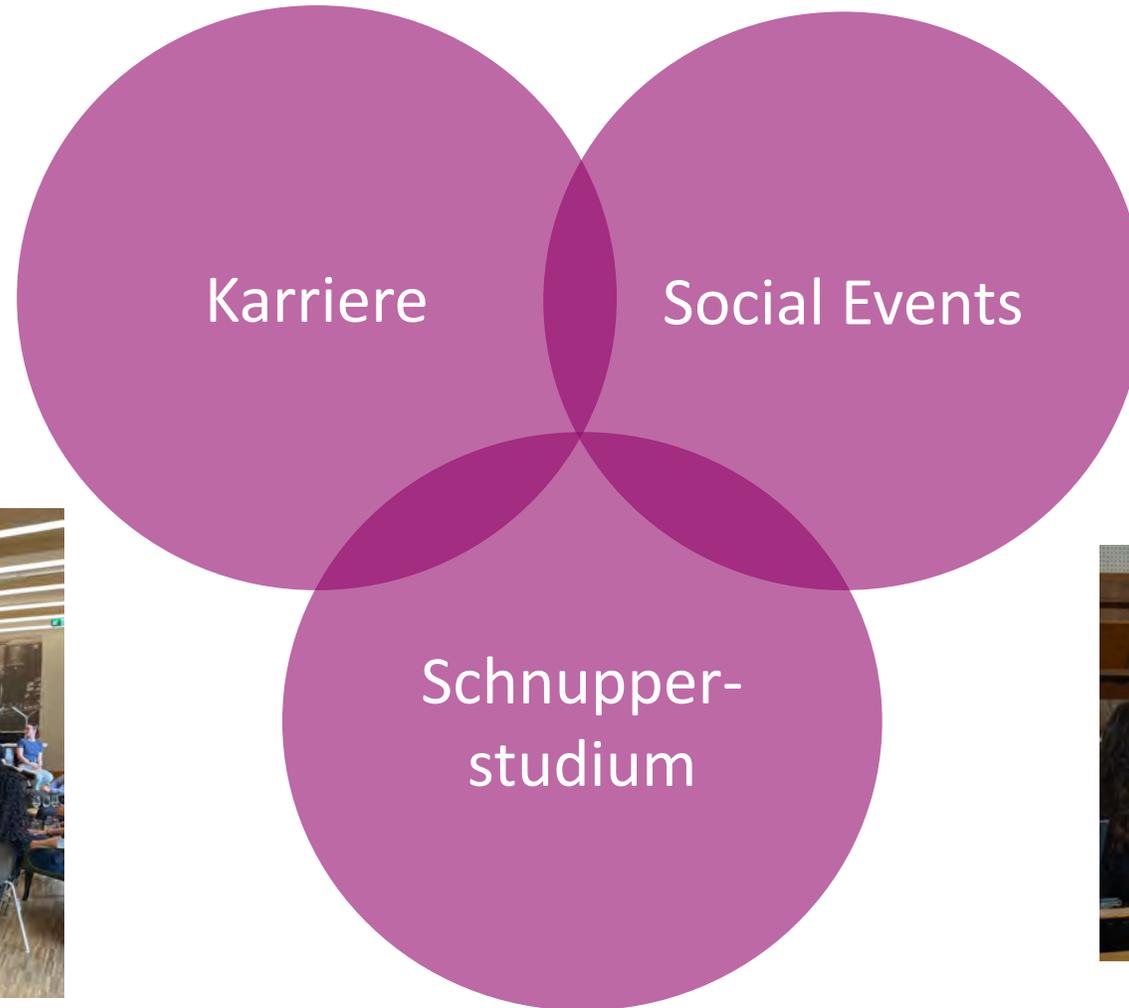
Student TAs



# Herausforderungen



# Unsere Events



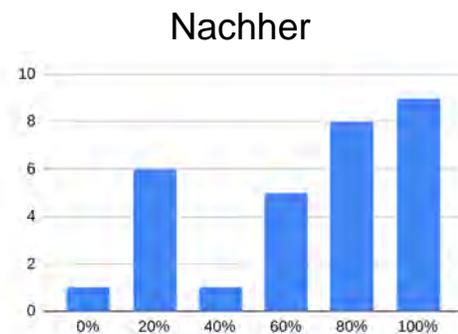
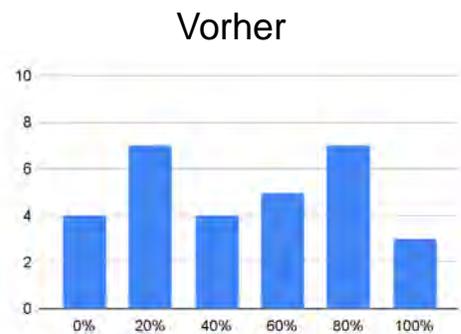
# Karriere

- Firmen-Events
- Career Panels
- Diskussionen mit Professor:innen
- Firmen News in Newsletter



# Schnupperstudium: Mehr Frauen im Informatik Studium

- Für Gymnasiastinnen
- 2 mal pro Jahr
- Rund 30 Teilnehmerinnen
- Wahrscheinlichkeit Informatik zu studieren:



# Social Events

- Semester-Apéro 2. SW
- Mentoring Event mit VIS 3. SW
- Schlittschuh fahren
- Runclub
- Movie Night
- ...



CSNOW  
**WOMEN'S MEETUPS** MASTERS: Tues, 12.03  
BACHELORS: Thurs, 14.03  
BQM | 18:00  
Come and meet fellow female CS students over free drinks on us!



Future Computing Laboratory



Design Your Own Hardware





# CSNOW

Network of Women in Computer Science

Website



Newsletter



Broadcast channel



Social Media





Association of Computer Science Students at ETH

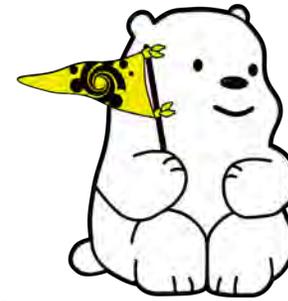
Your Student Association; from Students, for Students

Jonas Blank  
President



## Who we are

- Students like you (+ Björn, our polar bear mascot!)
- Volunteers, who want to do fun stuff alongside their studies
- Kind people, who will stand up for you!





## Events

party, organize, enjoy





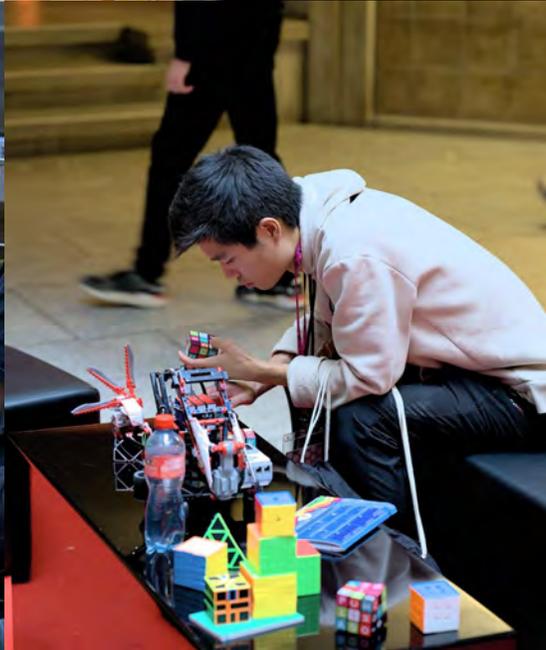
# VOETH'S 2025 MASTER'S WELCOME WEEKEND

19th to 21st of September  
CHF 60.-











# Important Events in HS25

- 19. - 21.09. Master Welcome Weekend
- 22.09. VIS4U
- 25.09. VSETH Erstsemestrigenfest (ESF)
- 29.09. VIS General Assembly (GA)
- 03.10. Bytecrash Party
- 08.10. Dumpling Dinner
- 11.10. VIScon
- 13.10. - 17.10. Heimwoche
- 30.10. Midweek Mexican Madness
- 31.10. - 01.11. Björn CTF
- 28.11. FIGUGEGL
- 19.12. Winterbrunch





Coffee

2x per day!



# Common Room – free Coffee and Beer





Exam Collection

[exams.vis.ethz.ch](https://exams.vis.ethz.ch)

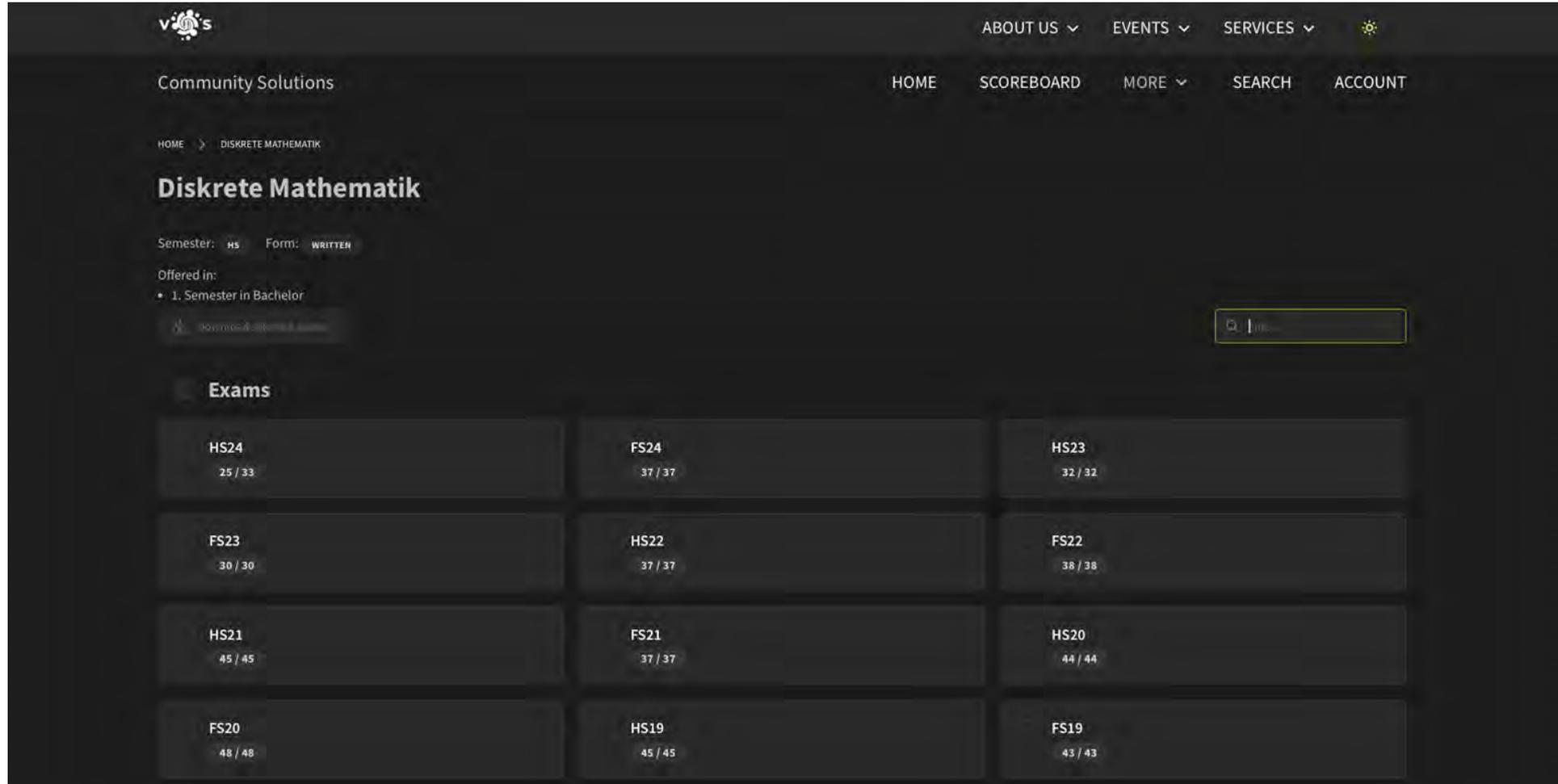






The screenshot shows the 'Community Solutions' website interface. At the top, there is a navigation bar with the VIS logo on the left and menu items: ABOUT US, EVENTS, SERVICES, HOME, SCOREBOARD, MORE, SEARCH, and ACCOUNT. Below the navigation, the page title 'Community Solutions' is displayed, followed by sorting options 'Alphabetical' and 'By Semester'. The main content is organized into two sections: '1. Semester' and '2. Semester'. Each semester section contains a grid of exam topics, each with a title, the number of exams and documents, and a progress bar.

Semester	Exam Topic	Exams	Documents
1. Semester	Algorithmen und Datenstrukturen	44	6
	Diskrete Mathematik	45	16
	Einführung in die Programmierung	35	4
	Lineare Algebra	36	16
2. Semester	Algorithmen und Wahrscheinlichkeit	8	6
	Analysis	50	25
	Digital Design and Computer Architecture	39	18
	Parallele Programmierung	24	7



The screenshot shows the website interface for 'Diskrete Mathematik' exams. The page includes a navigation bar with 'HOME', 'SCOREBOARD', 'MORE', 'SEARCH', and 'ACCOUNT'. Below the navigation, the course title 'Diskrete Mathematik' is displayed, along with semester and form information. A search bar is present on the right. The main content area is titled 'Exams' and contains a grid of 12 exam result cards, each showing a course code and a score out of a total.

Exam Code	Score
HS24	25 / 33
FS24	37 / 37
HS23	32 / 32
FS23	30 / 30
HS22	37 / 37
FS22	38 / 38
HS21	45 / 45
FS21	37 / 37
HS20	44 / 44
FS20	48 / 48
HS19	45 / 45
FS19	43 / 43



**Task 2. Number Theory** ..... 23 Points

a) Short Questions. Each correct answer gives 2 points. No justification is required. (4 Points)

1.) Compute  $R_{11}(9^{2024})$ .

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**Albert Cerfeda** @acerfeda · 10 months ago 13

$R_{11}(9^{2024}) = R_{11}(9^{R_{11}(2024)}) = R_{11}(9^4) = R_{11}(-2^4) = R_{11}(16) = 5$

+ Add Comment    ... More

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**Marius Mayer** @marmayer · about 1 year ago 9

**Answer**

Useful information:

- $a^{\varphi(n)} \pmod n = 1$
- $\varphi(11) = 10$
- $a^{\varphi(11)} \pmod{11} = R_{11}(a^{\varphi(11)}) = R_{11}(a^{10}) = 1$
- $9^2 \pmod{11} \equiv 81 \pmod{11} \equiv 6 \pmod{11}$

Therefore,

$R_{11}(9^{2024}) = R_{11}((9^{202})^{10} \cdot 9^4) = R_{11}(9^{R_{11}(2024)}) = \dots$

+ Add Comment    ... More

Add Answer                      Hide Answers



University Politics

HoPoKo





## University Politics

- We represent your interests with the department.
- Lecture Feedback
- Close contact to Head of Department and Directors of Studies
- Sounding board for new ideas
- Find help for your problems



# Becoming a member and more...





## How to become a Member

On your myStudies select the VSETH membership under voluntary contributions.

**Voluntary contributions**

Note: If membership is selected, the personal and address data required for member administration and other club activities will be forwarded to the respective club.

	Yes	No
Solidarity fund for foreign students (CHF 5.-)	<input checked="" type="radio"/>	<input type="radio"/>
SOSETH membership (CHF 5.-)	<input type="radio"/>	<input checked="" type="radio"/>
VSETH membership (CHF 10.-; for doctoral students CHF 35.-)	<input checked="" type="radio"/>	<input type="radio"/>

# Mentoring Event

**When: 23.09.2025  
12:00**

**Sign up:**



**Where: StuZ**



## Participation is not enough? Get involved!

- Come to the General Assembly (it's held in English)
- Join one of our committees
- Help at events
- Join one of the university politics meetings and participate in the discussion



## Further Information

- Website: [vis.ethz.ch](https://vis.ethz.ch)
- Ask the board: [vis@vis.ethz.ch](mailto:vis@vis.ethz.ch)
- Ask the MoEB committee: [moeb@vis.ethz.ch](mailto:moeb@vis.ethz.ch)
- Ask your tour guide

## VIS Website





The federal government wants to cut the budget for education. This will result in:

- a **doubling of tuition fees** for Swiss citizens and foreign nationals with Swiss education
- a **quadrupling of fees** for foreign students
- a massive weakening of equal opportunities
- a threat to the quality of education

**We put up a fight!**

**RALLY 1. OCT**  
**17:00 Bundesplatz Bern**

[VSS | UNES | USU]

VSS | Verband der Schweizer Studierendenschaften  
UNES | Union des Etudiant-e-s de Suisse  
USU | Unione Svizzera degli e delle Universitari-e

*bezahlbar-studieren.ch*

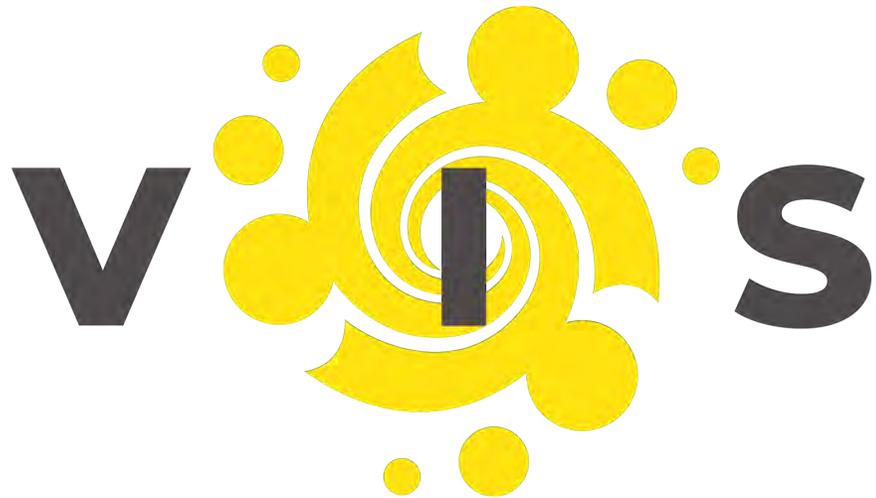


## Up next: Campus Tour & BBQ





Thank you!



**Fachverein**  
Verband der  
Studierenden  
an der ETH

[vis@vis.ethz.ch](mailto:vis@vis.ethz.ch) | [www.vis.ethz.ch](http://www.vis.ethz.ch)

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Verein der Informatikstudierenden an der ETH Zürich

