ETH zürich

Department of Computer Science

Welcome to the Department!

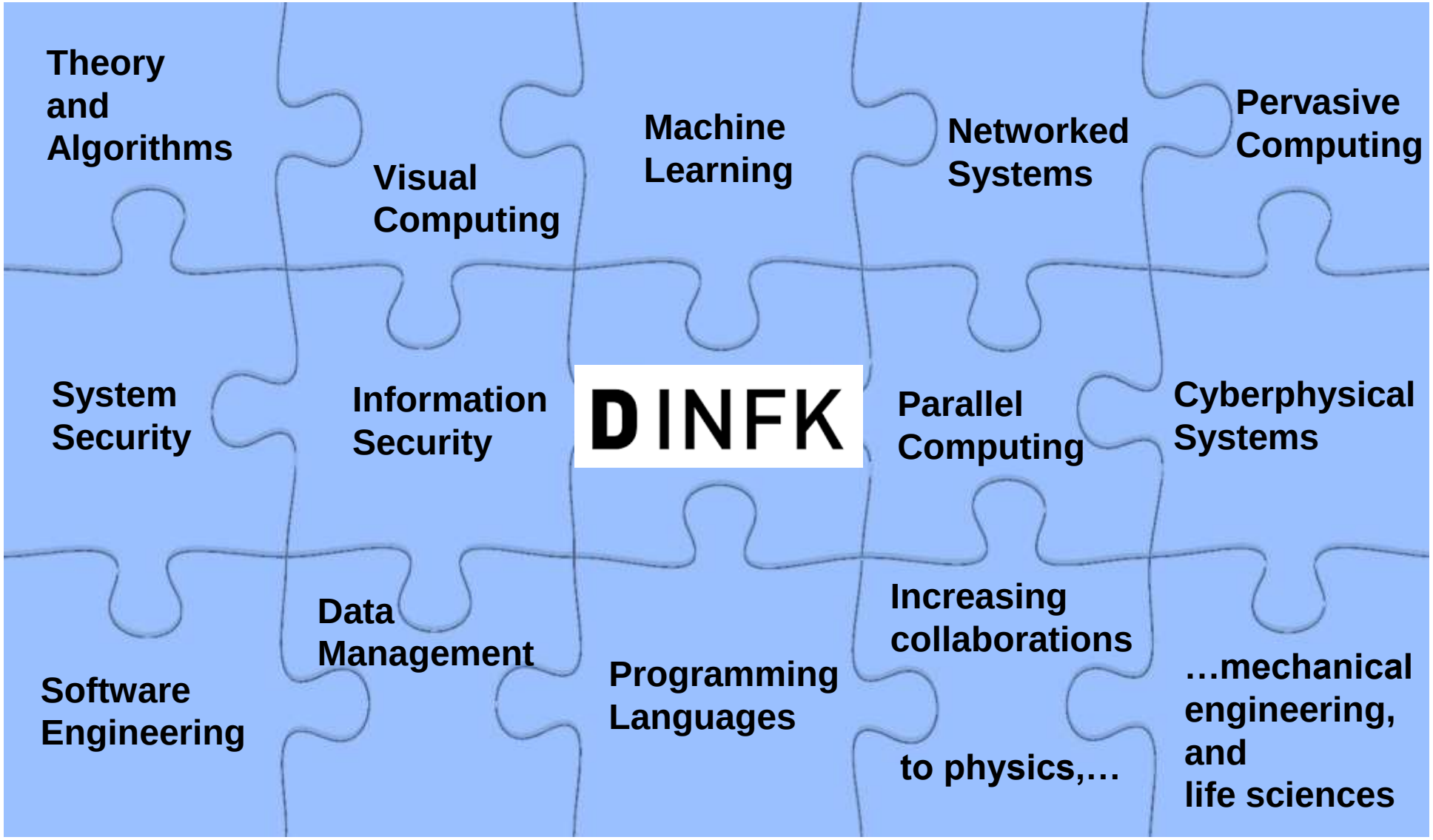
Prof. Dr. Dennis Hofheinz
Director of Studies

16 September 2024

D INFK

The CS (D-INFK) Faculty

Broad Topics in Research and Education



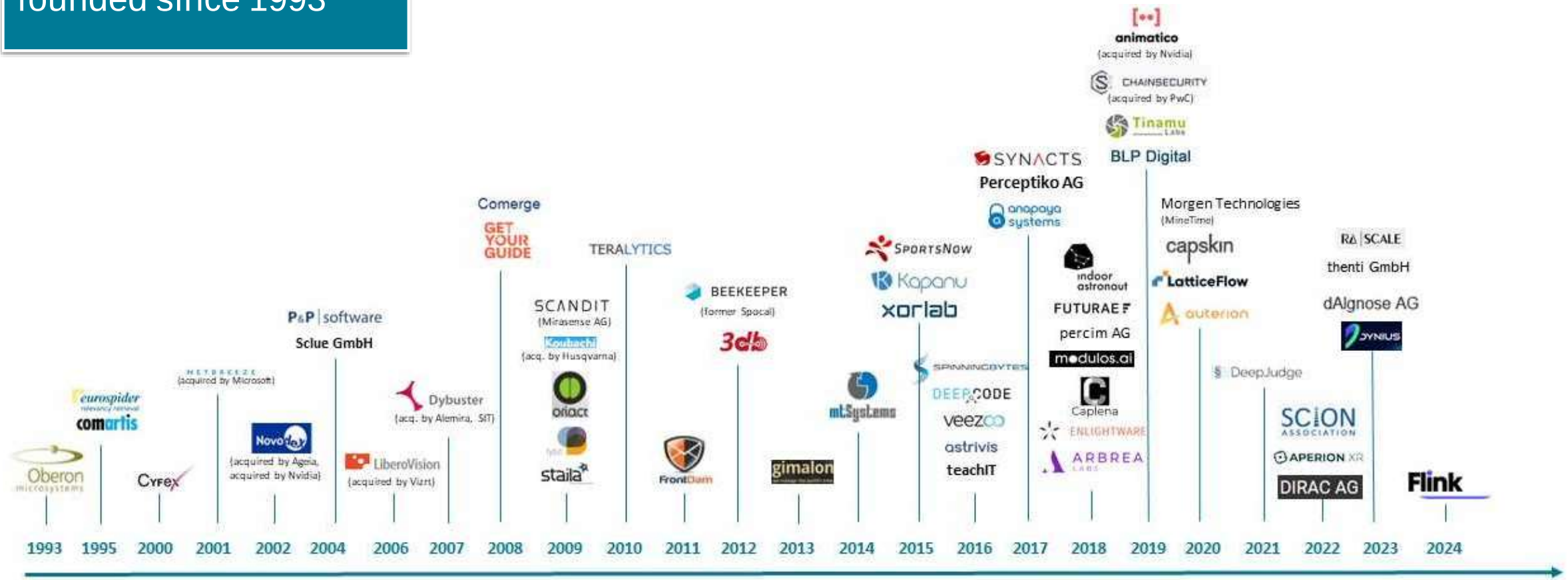
Top-Ranked CS Departments Worldwide

THE WORLD UNIVERSITY RANKINGS

Rank 2024	Institution	Country
1	University of Oxford	United Kingdom
2	Stanford University	United States
3	Massachusetts Institute of Technology	United States
4	Carnegie Mellon University	United States
5	**ETH Zurich**	**Switzerland**

Start Your Own Company

58 D-INFK Spin-offs
founded since 1993



D-INFK Master‘s Programmes

MSc Data Science

73 new students

MSc Computer Science

319 new students

MSc Cyber Security

48 new students

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!

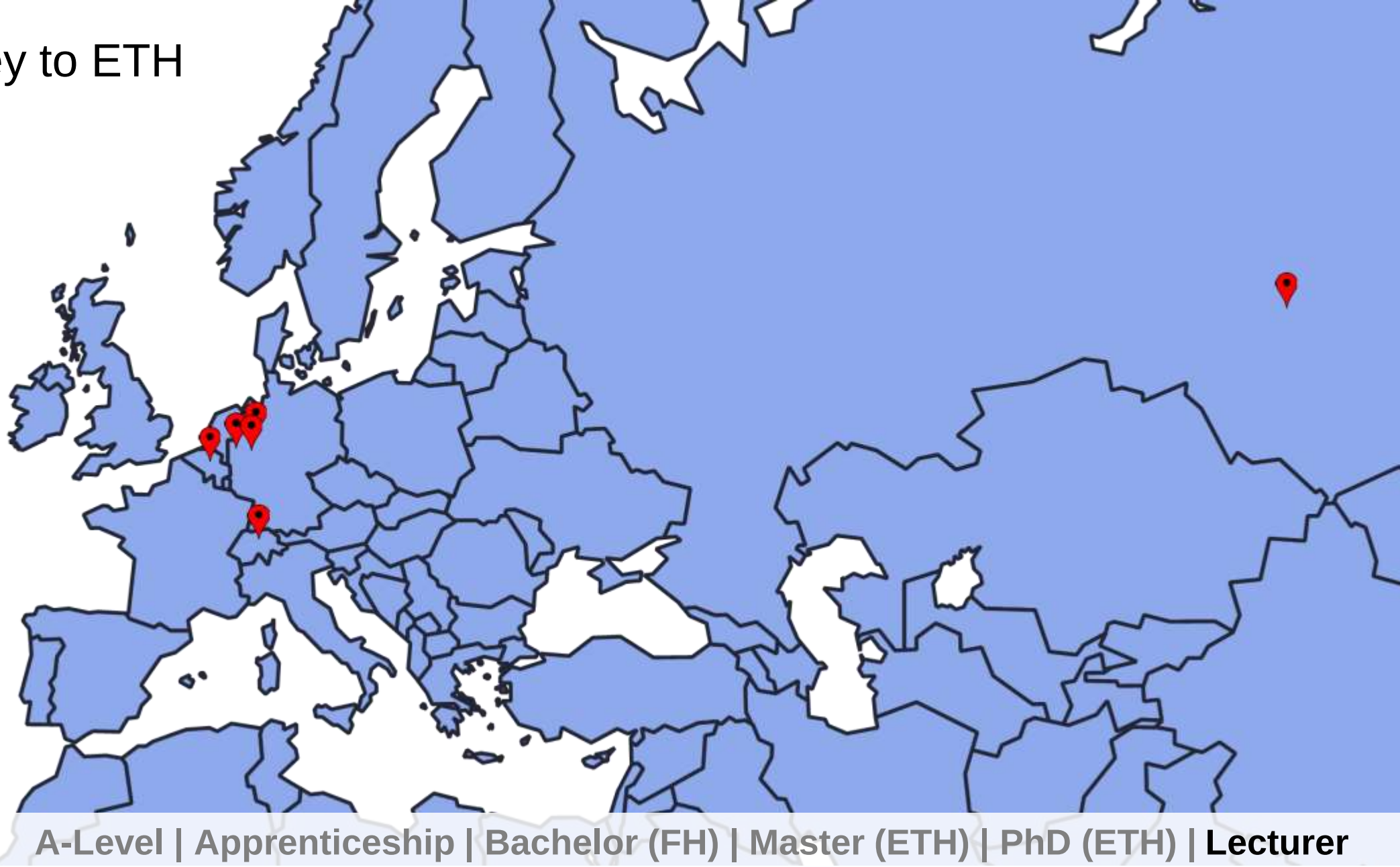
ETH zürich

Introduction to ETH Master's in CS

Dr. Malte Schwerhoff
Lecturer & Educational Developer

D INFK

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

Who is Who

Prof. Kenny Paterson
Department Head

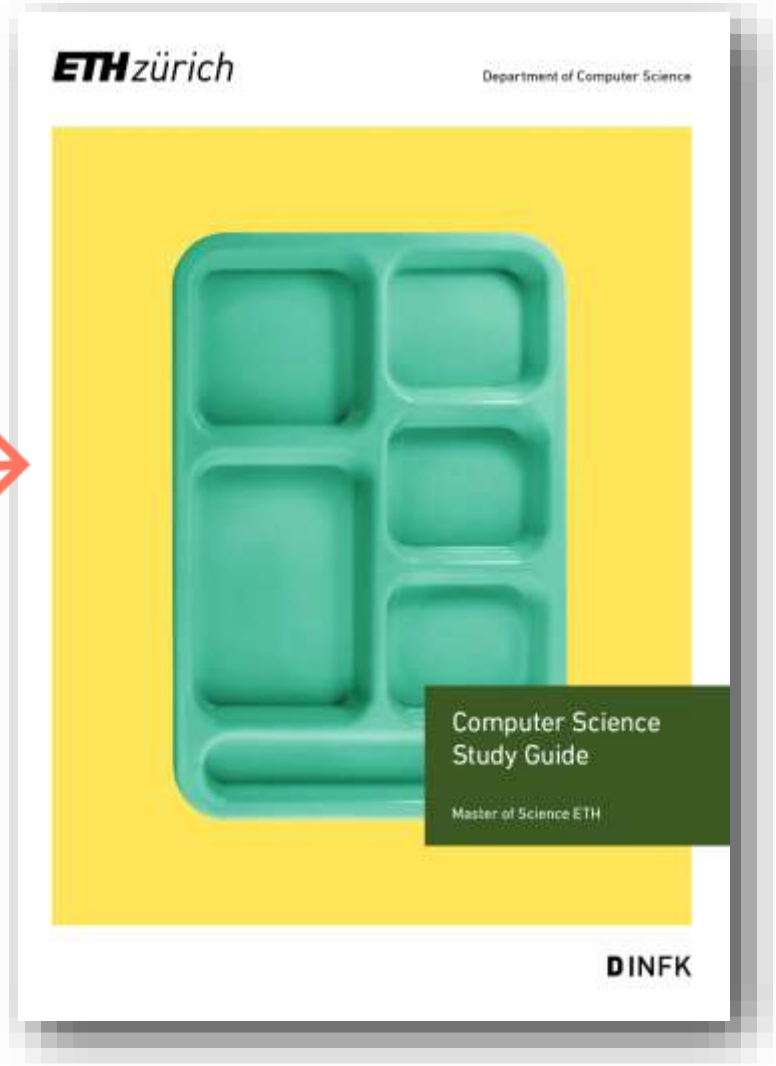
Prof. Dennis Hofheinz
Director of Studies

Denise Spicher
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

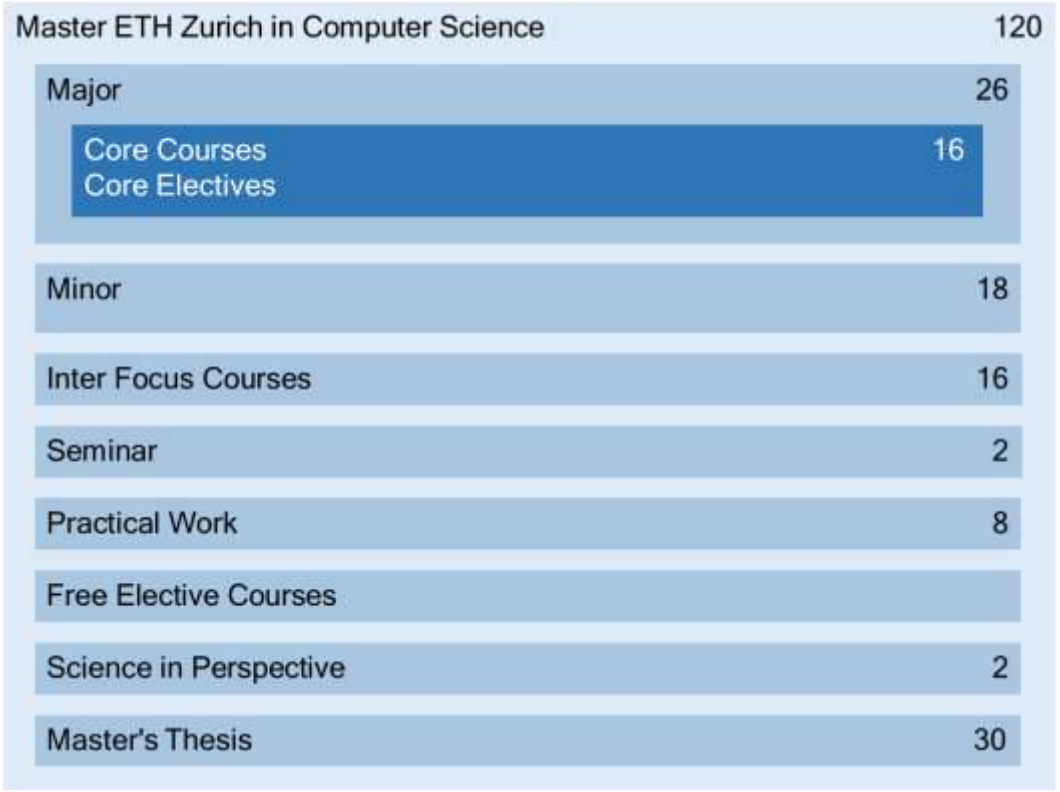
2 Poor

1 Very poor

- **Pass**: grade ≥ 4.0
- **Fail**: grade < 4.0
- Grading scale: 0.25

Repetition of exams:
Every examination can be repeated *once*

Master’s Programme Structure

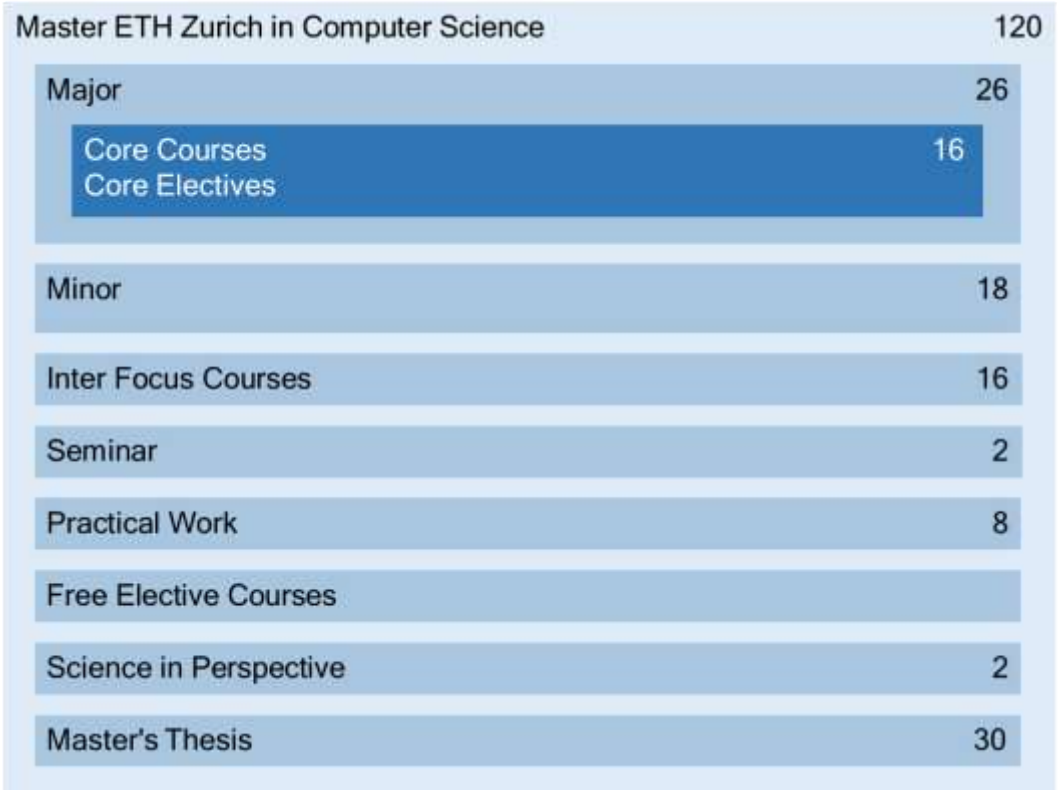


Choose one of five majors:

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

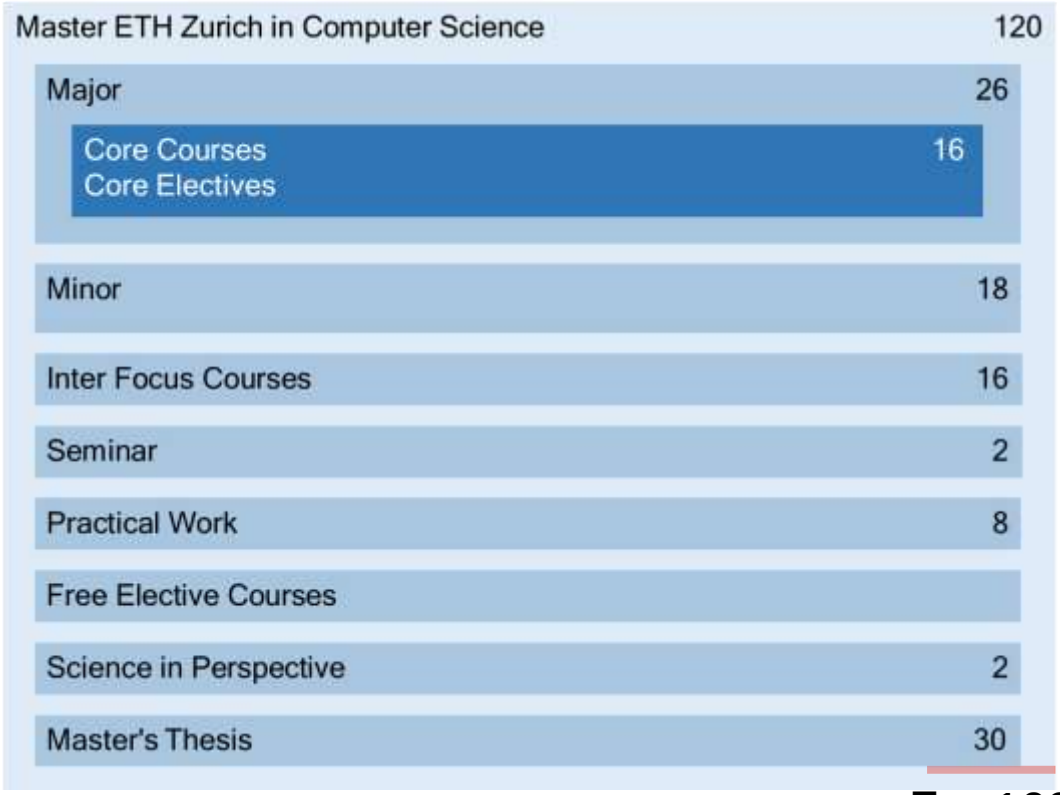
Courses per major: see “Core courses catalogue” PDF on the Master’s programme’s web site

Master’s Programme Structure



plus 10 credits from Core Courses or Core Electives

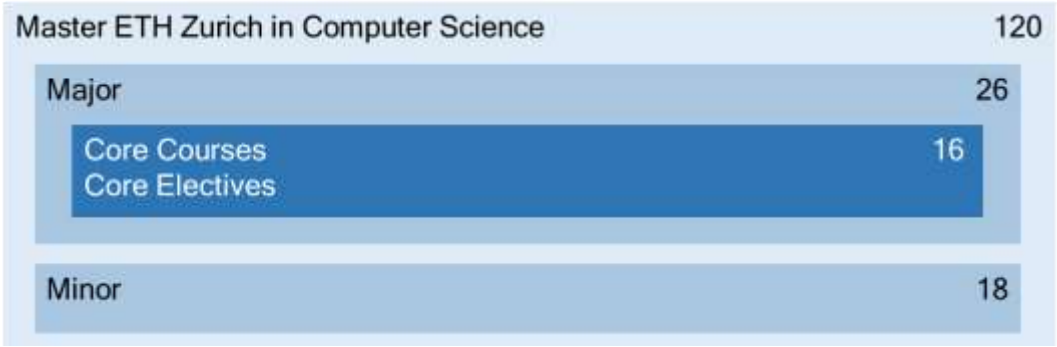
Master’s Programme Structure



plus 10 credits from
Core Courses or
Core Electives

Σ = 102, plus 18 credits from all categories
except seminars, thesis

Majors



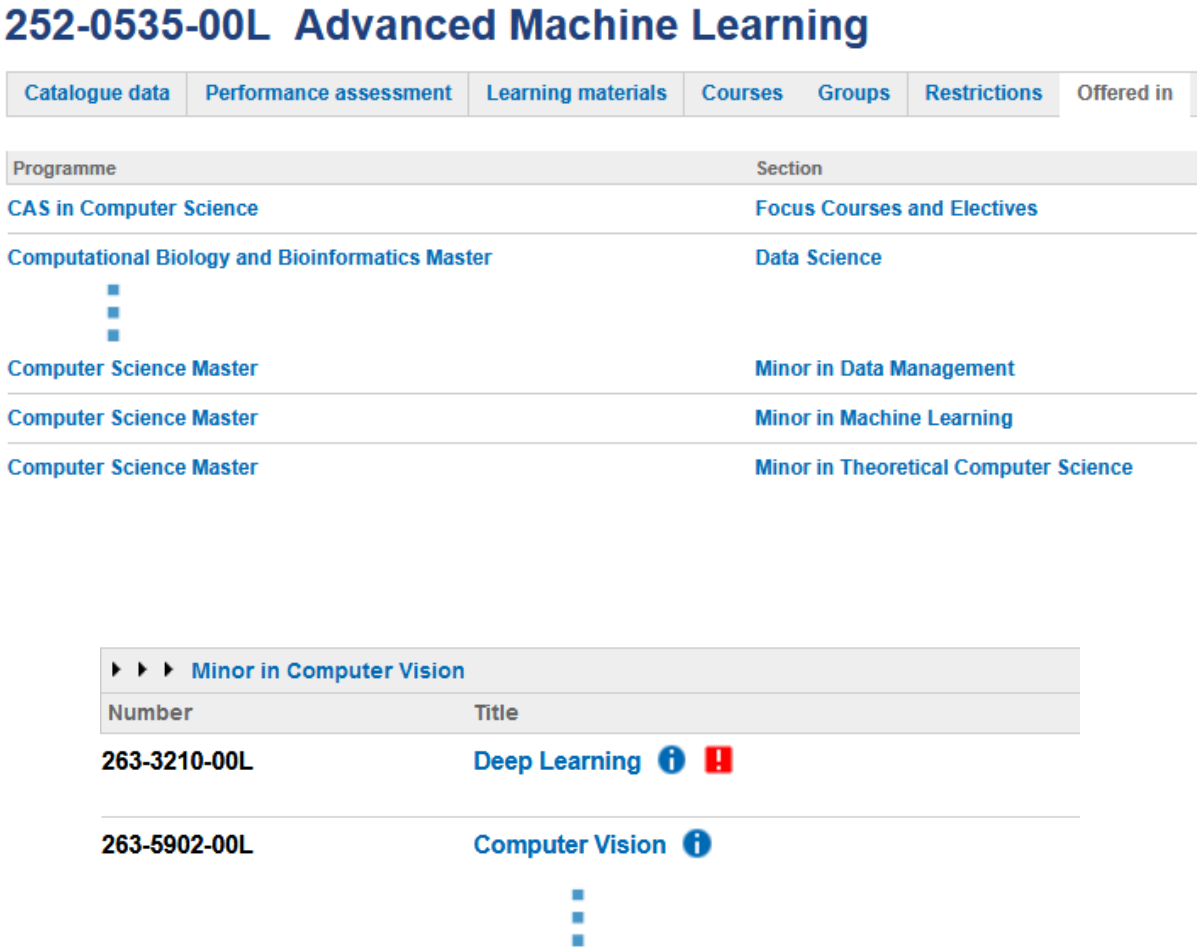
- Must choose major within **first four** semester weeks
- Major may be changed **once** (no study duration extension)
- Choice is made via mystudies.ethz.ch

Permitted Combinations of Majors & Minors

	Computer Graphics	Computer Vision	Data Management	Information Security	Machine Learning	Networking	Programmeming Languages and Software Engineering	Systems Software	Theoretical Computer Science
Data Management Systems	✓	✓	×	✓	✓	✓	✓	×	✓
Machine Intelligence	✓	×	✓	✓	×	✓	✓	✓	✓
Secure and Reliable Systems	✓	✓	✓	×	✓	✓	×	✓	✓
Visual and Interactive Computing	×	×	✓	✓	✓	✓	✓	✓	✓
Theoretical Computer Science	✓	✓	✓	✓	✓	✓	✓	✓	×

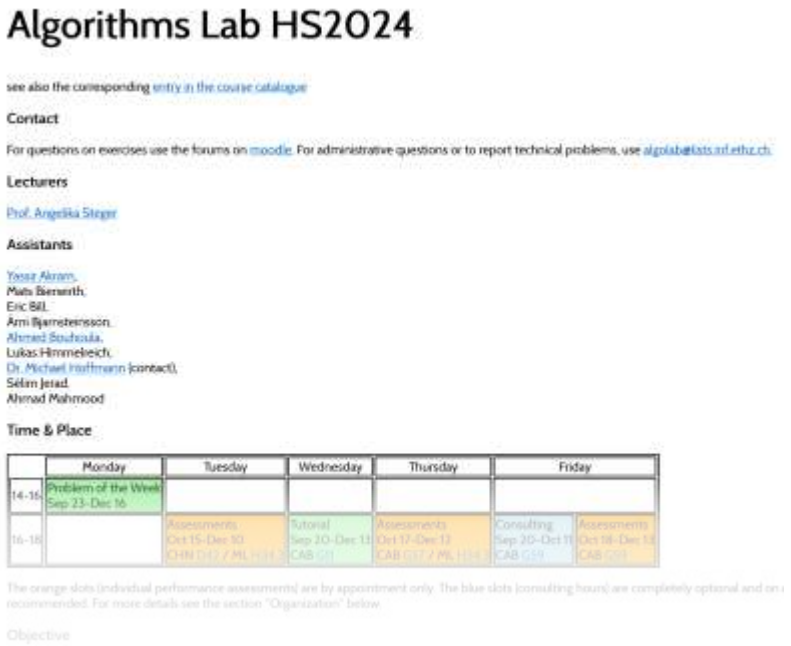
Minors

- 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



Inter Focus Courses - “The Labs”

- You need ≥ 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 HS2024

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 algolab@lists.inf.ethz.ch.

Lecturers

Prof. Angelika Steger

Assistants

Yasaz Akram,
Mats Bierwirth,
Eric Bill,
Arni Bjarnesteinsson,
Ahmad Bsoul-Issa,
Lukas Himmelreich,
Dr. Michael Hoffmann (contact),
Sélim Jerad,
Ahmad Mahmood

Time & Place

	Monday	Tuesday	Wednesday	Thursday	Friday	
14-16	Problem of the Week Sep 23-Dec 16					
16-18		Assessments Oct 15-Dec 10 CHN D 7 / ML H 41	Tutorial Sep 20-Dec 13 CAB G11	Assessments Oct 17-Dec 12 CAB G11 / CHN D 7 / ML H 41	Consulting Sep 20-Oct 11 CAB G11	Assessments Oct 18-Dec 13 CAB G11

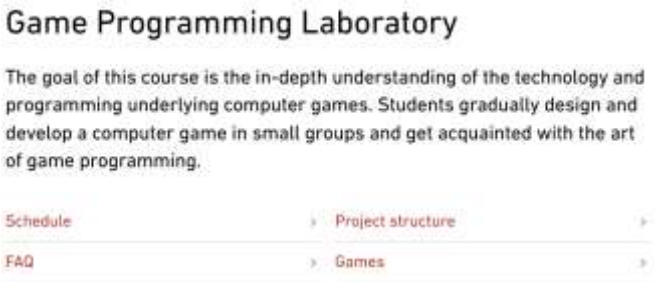
The orange slots (individual performance assessments) are by appointment only. The blue slots (consulting hours) are completely optional and ar
recommended. For more details see the section "Organization" below.

Objective

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.



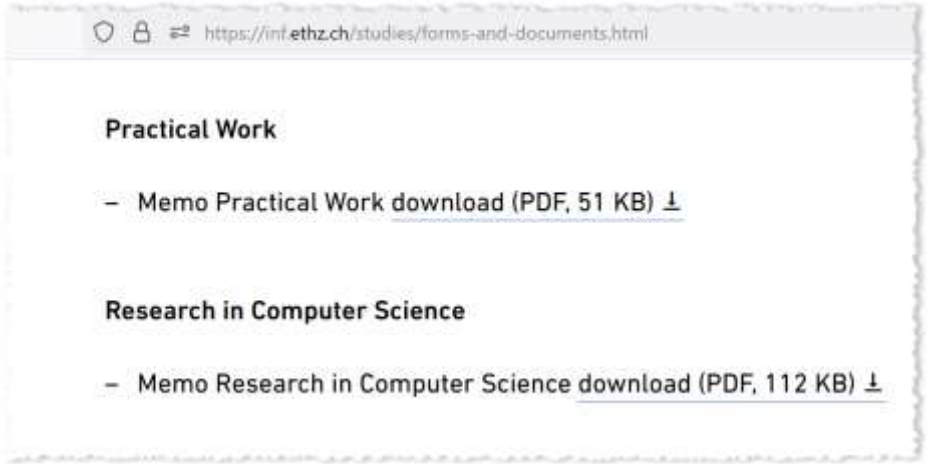
Free Elective Courses

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

- "Free" as in "see the fine-print"
  - All **Master's level** courses **in the area of computer science**
  - or a closely related field (e.g. D-MATH, D-ITET)
  - offered by ETH Zurich, EPFL, or University of Zurich

- **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.



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

Master ETH Zurich in Computer Science	120
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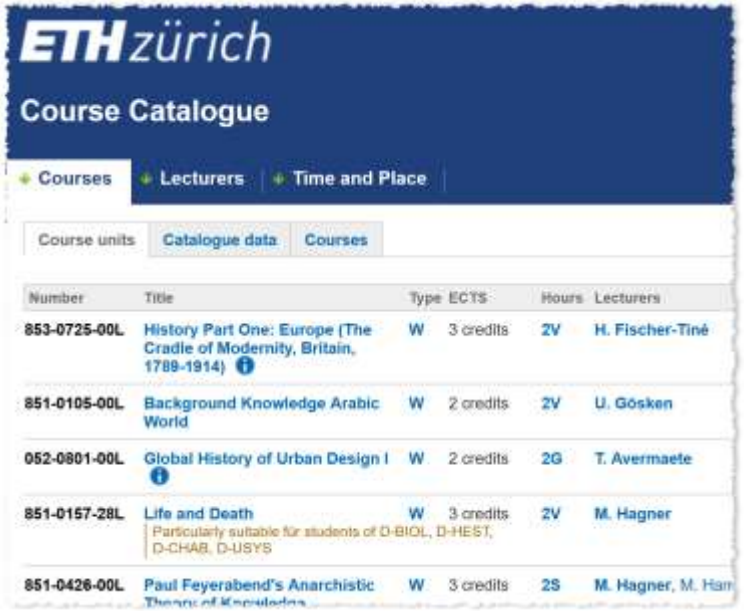
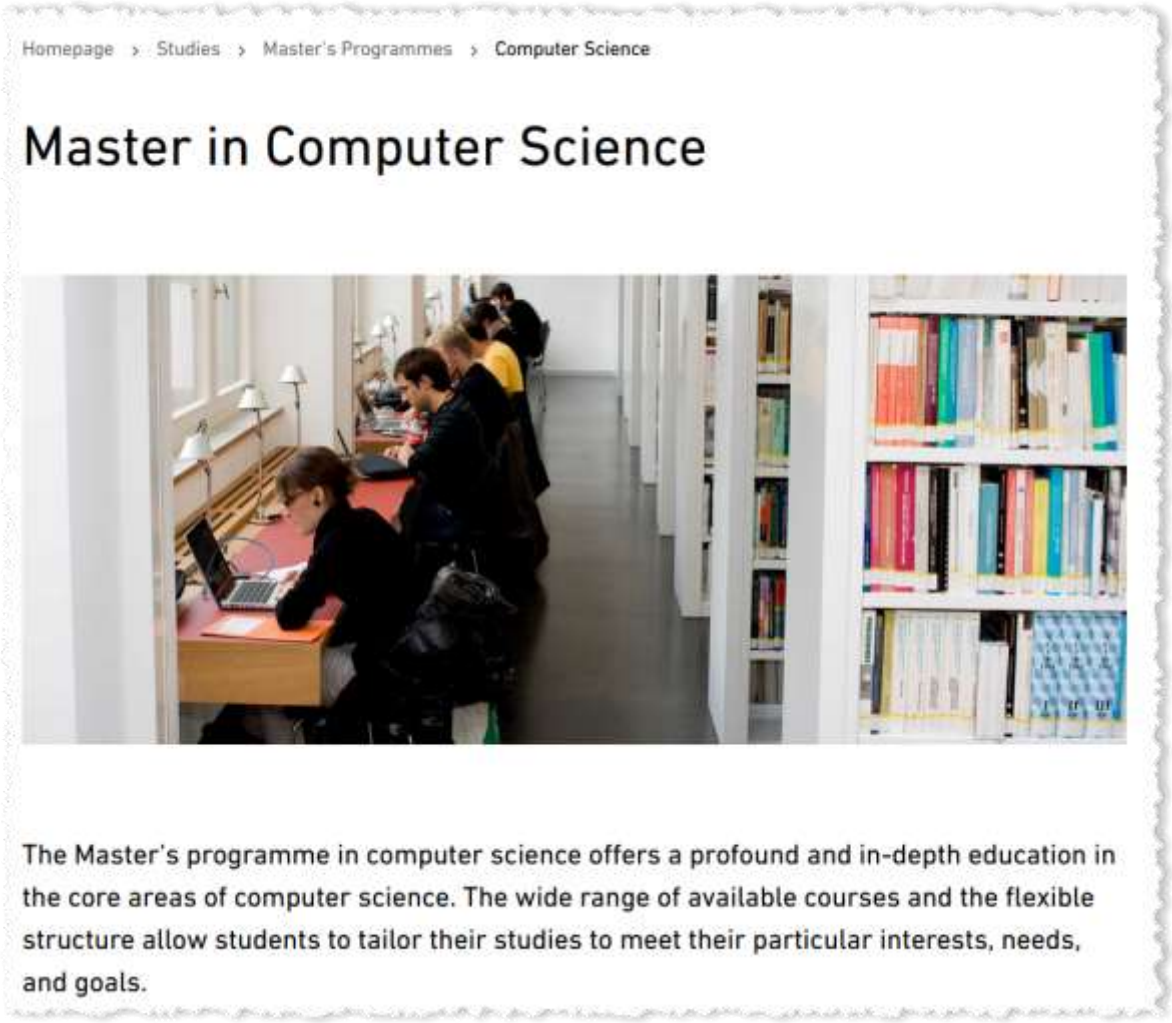


Getting started: Step by Step

General Information

- Master’s programme’s web site
- Specifically:
  - Study Guide
  - Core Course Catalogue
- List of courses: vvz.ethz.ch
- Fellow students
- Study Administration
- Your tutor
- …



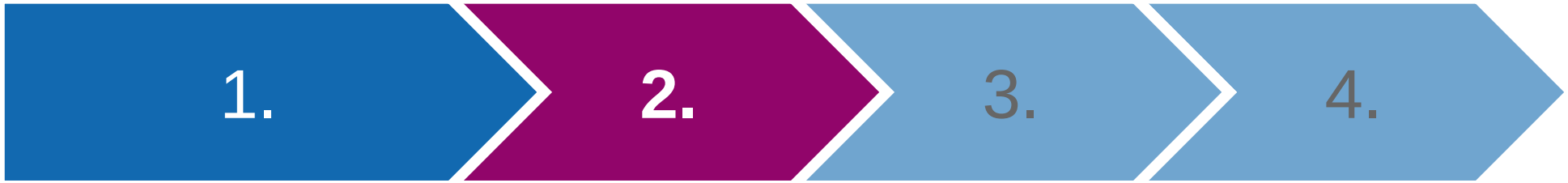
Step 1: Choose Major

- Choose major on myStudies: 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
- 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

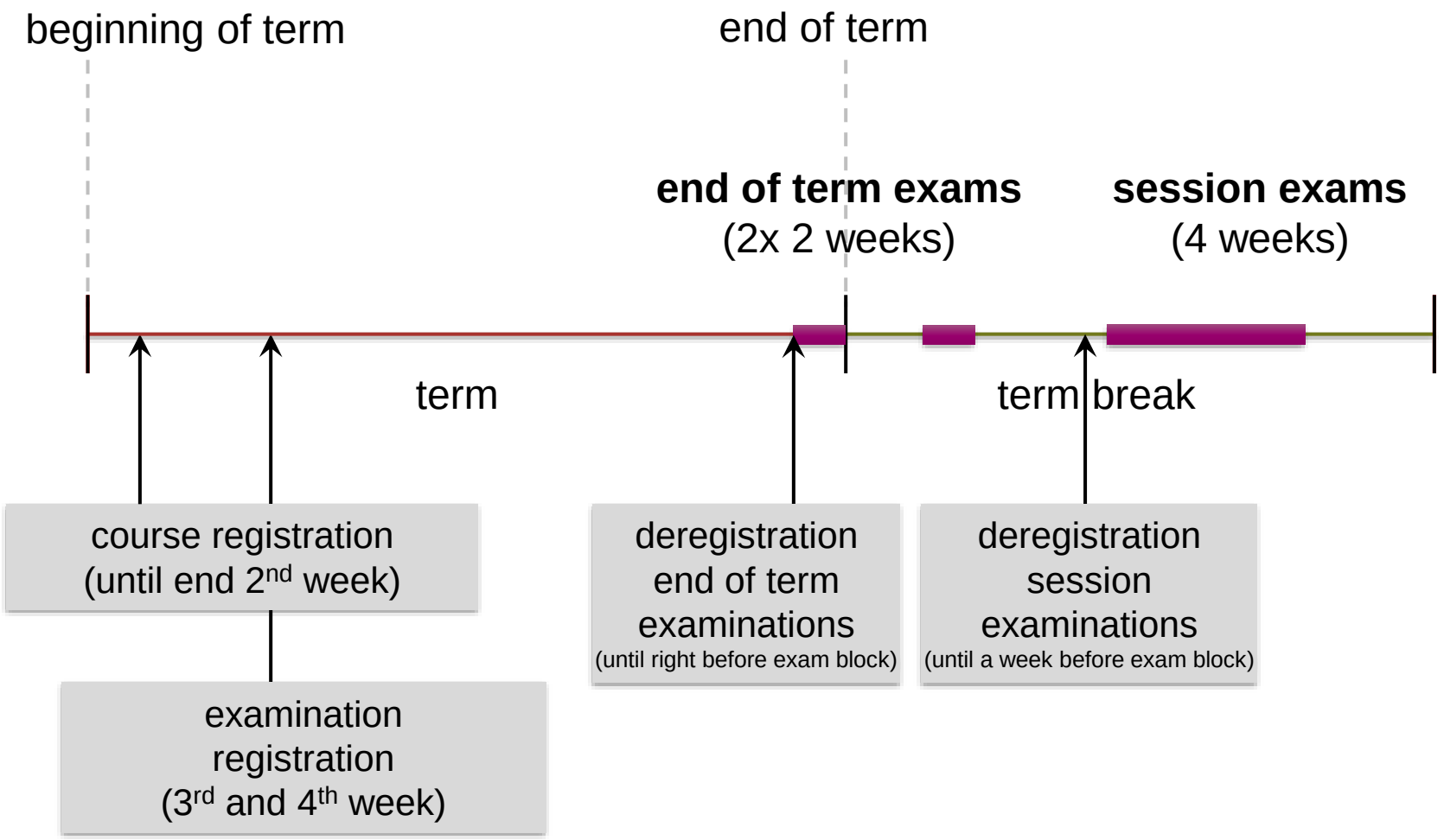
- Enrol for courses: mystudies.ethz.ch
- Revise your study plan, if necessary

Step 4: Thesis

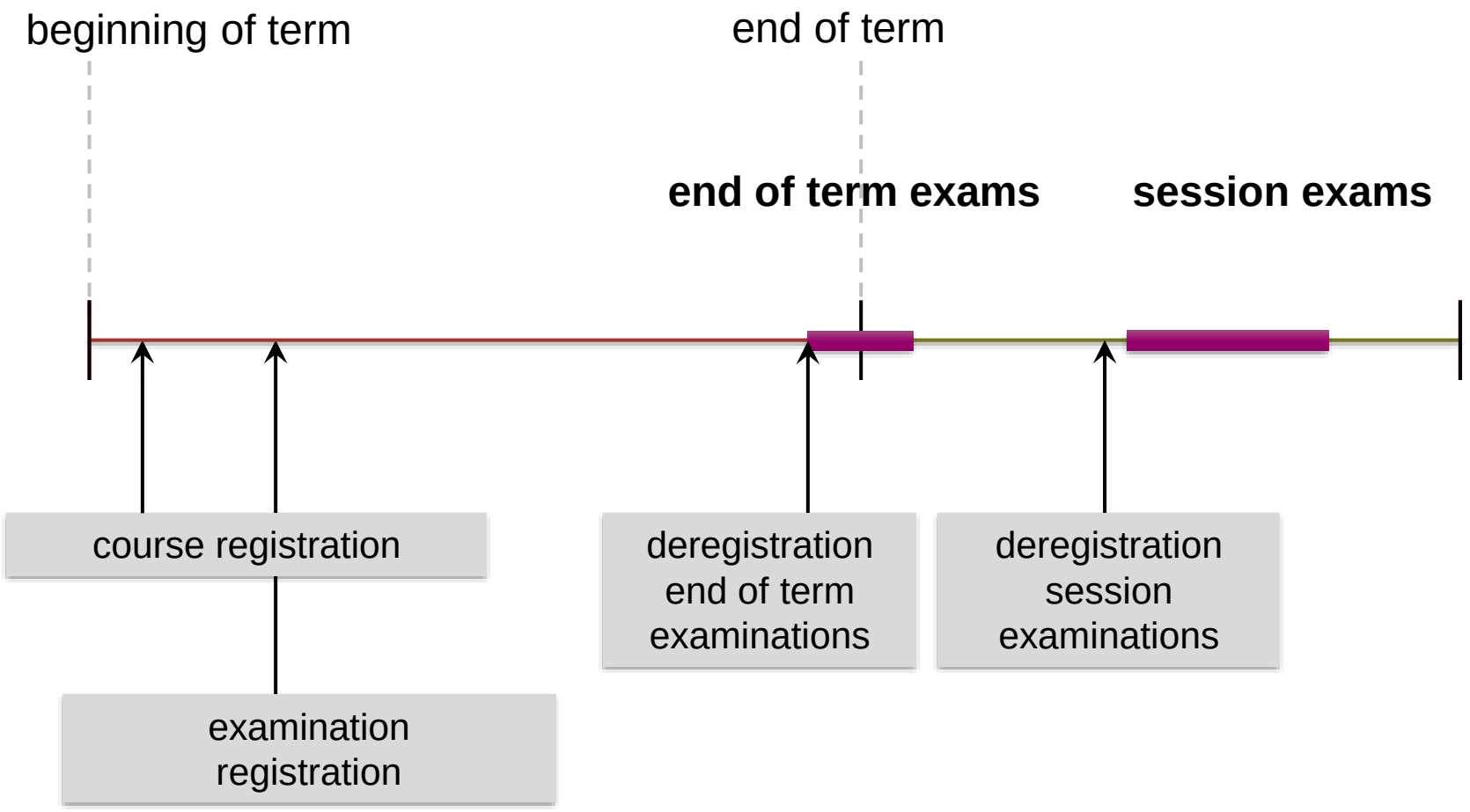
- Duration: at most 6 months
- Full-time → taking courses in parallel is not recommended
- Admission requirements
  - All additional requirements completed
  - Major completed (26 credits)
  - Inter Focus Courses (“the labs”, 16 credits) completed
  - At most 8 credits missing in total (besides thesis’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

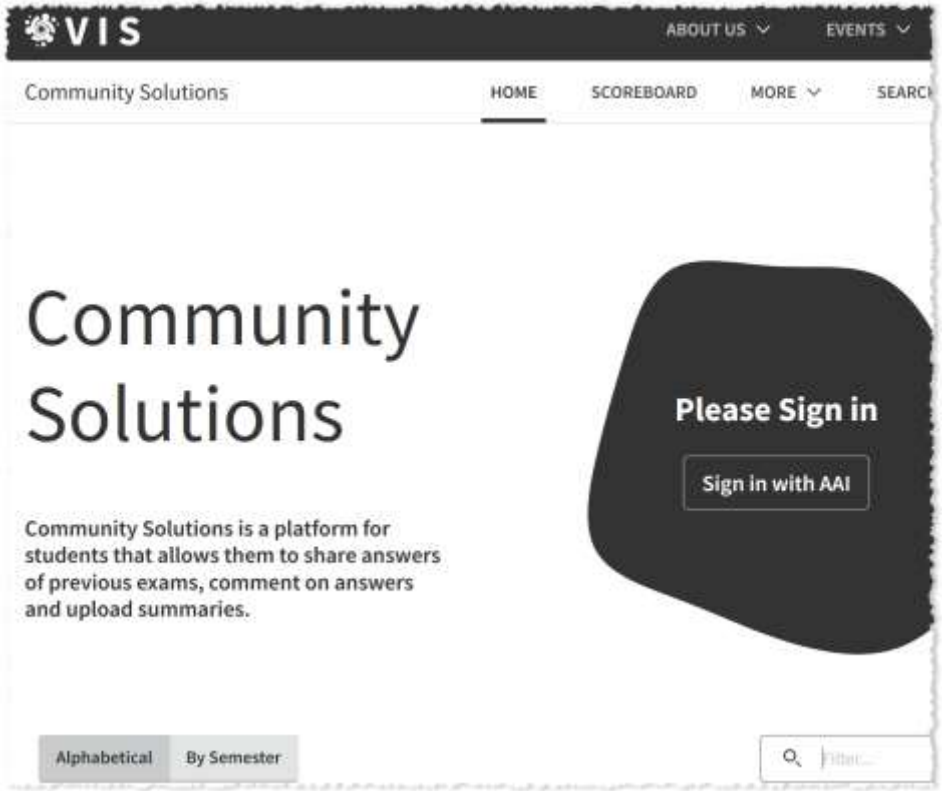
Overview semester dates

2024

Information days for final-year secondary school students	Wednesday, 04.09.2024 - Thursday, 05.09.2024
"Knabenschiessen" (local Zurich holiday)	Monday, 09.09.2024
Start Autumn semester	Monday, 16.09.2024
Welcome for new students	Monday, 16.09.2024
Classes begin	Tuesday, 17.09.2024
Doctoral awards ceremony	Friday, 25.10.2024
Dies Academicus ("ETH Day")	Saturday, 16.11.2024
Polyball (annual student prom)	Saturday, 30.11.2024
End of Autumn semester	Friday, 20.12.2024
Christmas break	Tuesday, 24.12.2024 - Thursday, 02.01.2025

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

- As of Autumn 2024, all newly entering students must possess a laptop meeting certain (minimum) requirements
  - May also be used for exams ➜ 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, changeing 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!

ETH zürich

Department of Computer Science

CS Master‘s at ETH – A Survival Guide

Felix Möller

16th September, 2024

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?

- Felix
- Originally from Saarbrücken, Germany
- B.Sc. Computer Science at Karlsruhe Institute of Technology (KIT), Germany
- Currently 3rd semester M.Sc. Computer Science
- Major Machine Intelligence, Minor Information Security
- Part of the VIS MoEB commitee

What is VIS?

- VIS = Verein der Informatikstudierenden.
- In English: Student Association of Computer Science Students
- Lots of events (check out VIS Website: vis.ethz.ch)
- Free coffee & beer (in CAB E32)
- MoEB Commitee: Organizing events for Master ohne ETH-Bachelor (MoEB) students -> most of you!



Advice for Living in Zurich

- Housing
  - 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
  - For questions about housing, contact ETH Housing Office (www.wohnen.ethz.ch)
- Transportation
  - PubliBike for getting around on a bike
  - Use Friends pass if you plan on doing a trip with your friends
  - HalbTax (Half-Fare) & GA Night can be helpful if you travel with SBB often
  - E-Link for commute between Zentrum Campus and Hönggerberg Campus




Non-ETH related advice

- BQM is a student bar below Polyterrasse
- Events: VIS-Events, Erstsemestrigenfest (ESF), Street Parade, Polyball + many more!
- Nature: Check out the lake and the river. Go on hikes
- ETH/UZH App (For Mensa Information + Events)
- ASVZ App (Gym + All kinds of sports)
- Where to get free/cheap stuff: Riccardo, Tutti, Facebook Groups, Telegram Groups, Facebook Marketplace

Advice related to study program

- Use the **flexibility** of the study program, e.g. take a semester off to do an internship, take more/less courses in a specific semester, BUT
- Don’t do significantly more than 30 Credits (especially in your first semester!)
- Try to taylor the study program to your future career plans (academia vs industry vs startups)
- Don’t do two labs in one semester, but try to do them in the first year
- Don‘t choose the Machine Intelligence major if you have a bad math background
- Choose your project mates (very) wisely ☺

Advice related to study program - Continued

- Check out reviews for courses you want to take
- Semester projects are a good step towards an RA position, a master thesis (and maybe even a PhD?)
- Distribute your workload (session vs end-of-semester exams vs projects)
- Take enough breaks (I recommend one day per week without studying)
- Personal opinion: The biggest challenge you will face at ETH is overcoming your own ego
- Try to escape the ETH Bubble from time to time :)

Course Review Website

Helpful Links

VIS-Website

ETH-App
(Mensa, Events,…)

Erstsemestrigenfest

ETH Analytics Club

ASVZ

D-INFK
Discord Server

Polyball

ETH Entrepreneur Club

TL;DR

- Student Association: VIS
- Don‘t overwork yourself!
- Don‘t compare yourself to others. Study **at your own pace** and listen to your needs
- Ask for advice whenever needed
- Be kind and help others
- (Optional) Buy HalbTax, NightGA, …
- Jobs: Research/Teaching Assistant, ETH Juniors
- Take advantage of living in one of the most beautiful cities in the world ☺

Have a Great Start at ETH and in Zurich!

CSNOW

Network of Women in Computer Science

Mentoring

Social Events

Career Events

WhatsApp channel:

Newsletter:

https://csnow.inf.ethz.ch/

ETH zürich DINFK CSNOW

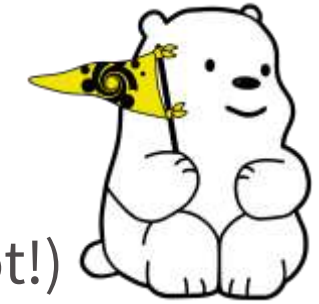
Association of Computer Science Students at ETH

Your Student Association; from Students, for Students

Jonas Blank
Präsident

Simon Ebner
Vize-Präsident

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!

Important Events the Fall Semester 2024

- 20. - 22.09. Master Welcome Weekend
- 24.09. VIS4U
- 26.09. VSETH Erstsemestrigenfest (ESF)
- 30.09 VIS General Assembly (GA)
- 4. - 6.10. Björn CTF
- 12.10. VIScon
- 26.10. Halloween Dinner
- 29.11. FIGUGEGL
- 7.12 VIS ESF
- 20.12 Winterbrunch


Welcome Weekend
vseth
VIS
MOEB
September 20-22.
55 CHF

20.09.2024

Mentoring Event

Find your Mentor & Mentee!

vis

CSNOW

vseth


SNOW
DAYZ
2022
12. - 19. February
Lenzerheide GR
www.vis.ethz.ch
ergon
vis
voeth

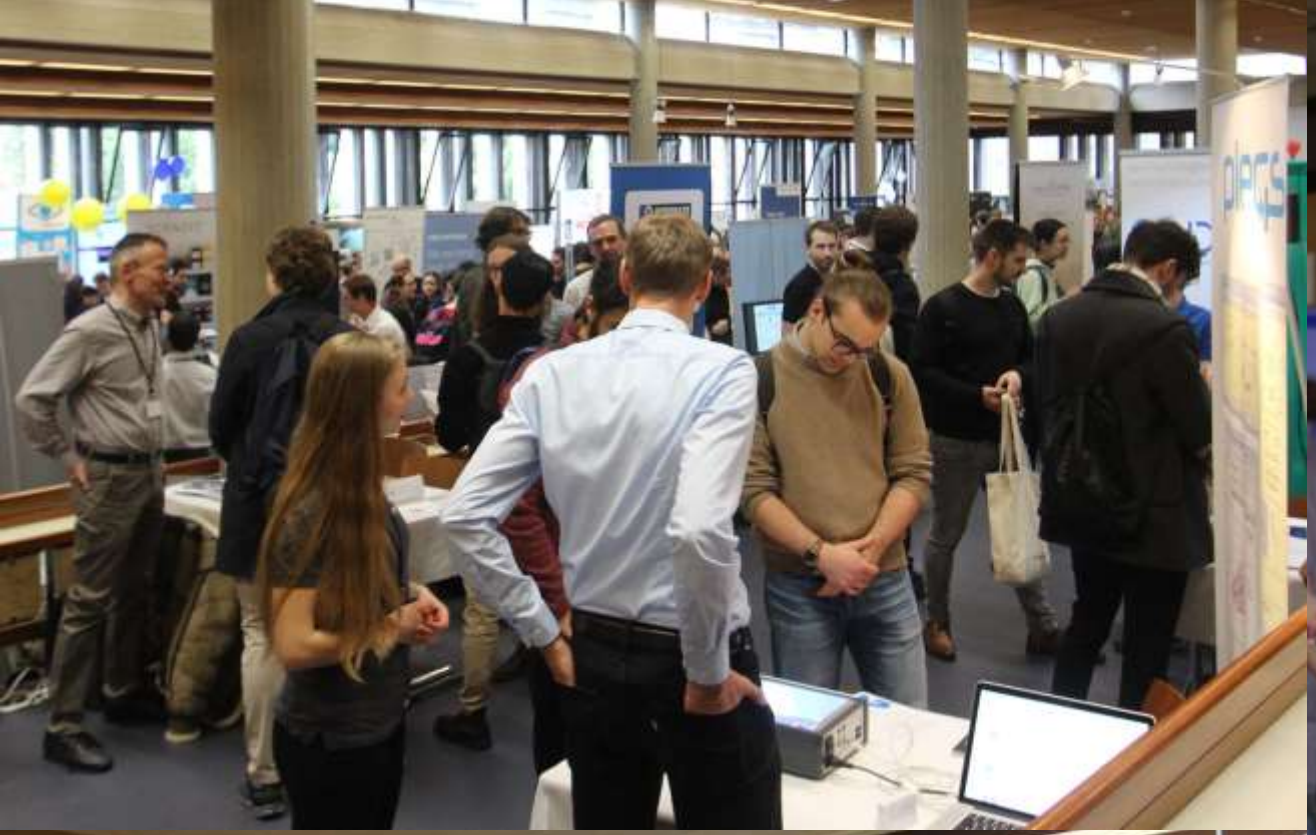

Foxtrail
31. März, 5.–
Gruppe 3
14:20 Uhr
vis
voeth


VISKAS
12.05.2023
18:00
Katzensee
FREE
Food&Drinks
Swimming
VIS
only
sponsored by
ergon
vis
voeth


Beer Tasting
11.3.22 17:30
CAB D21 CHF 10
vis
voeth


VIS
Summer Brunch
Roche
VIS
COFFEE
OPEN
May
31st

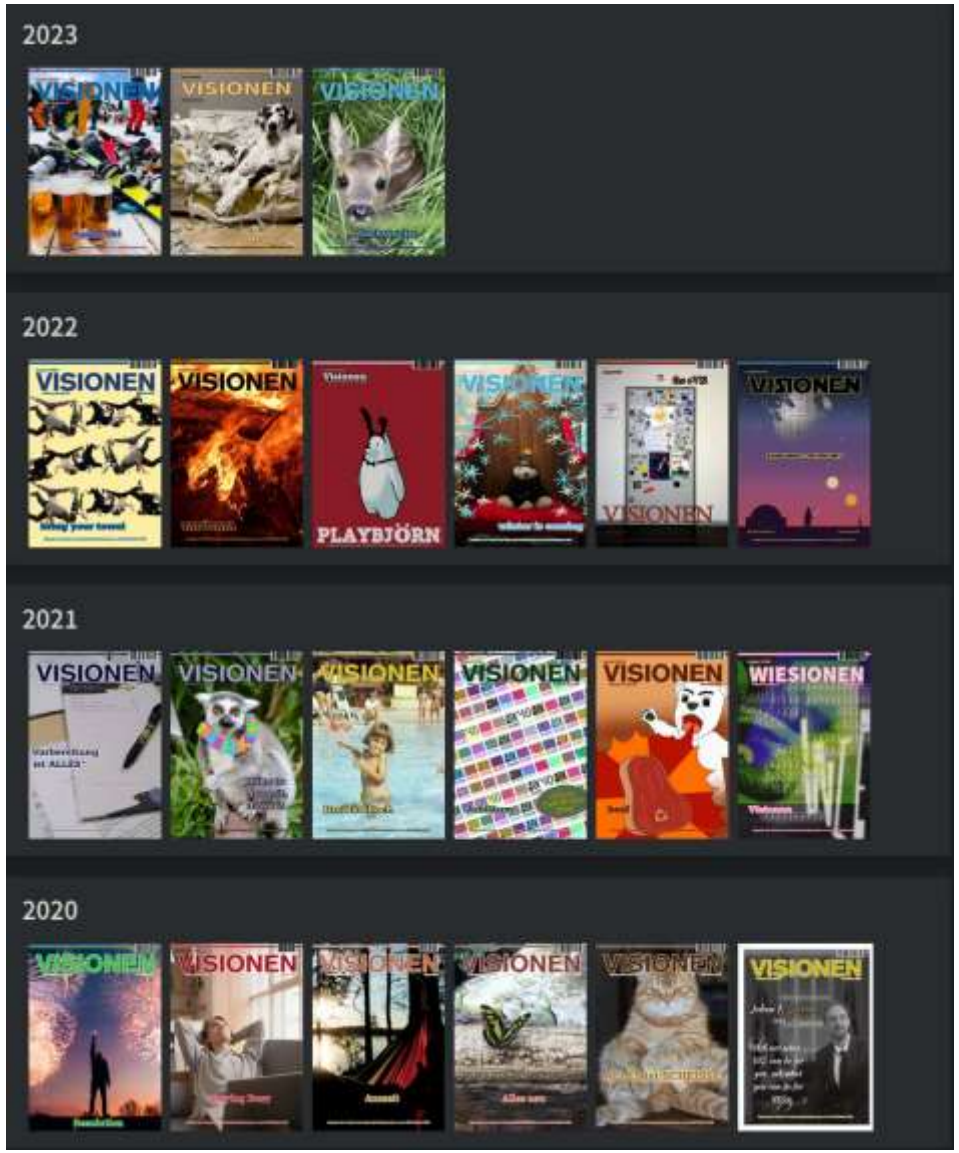

CHOCOLATE
TOUR




swisscom

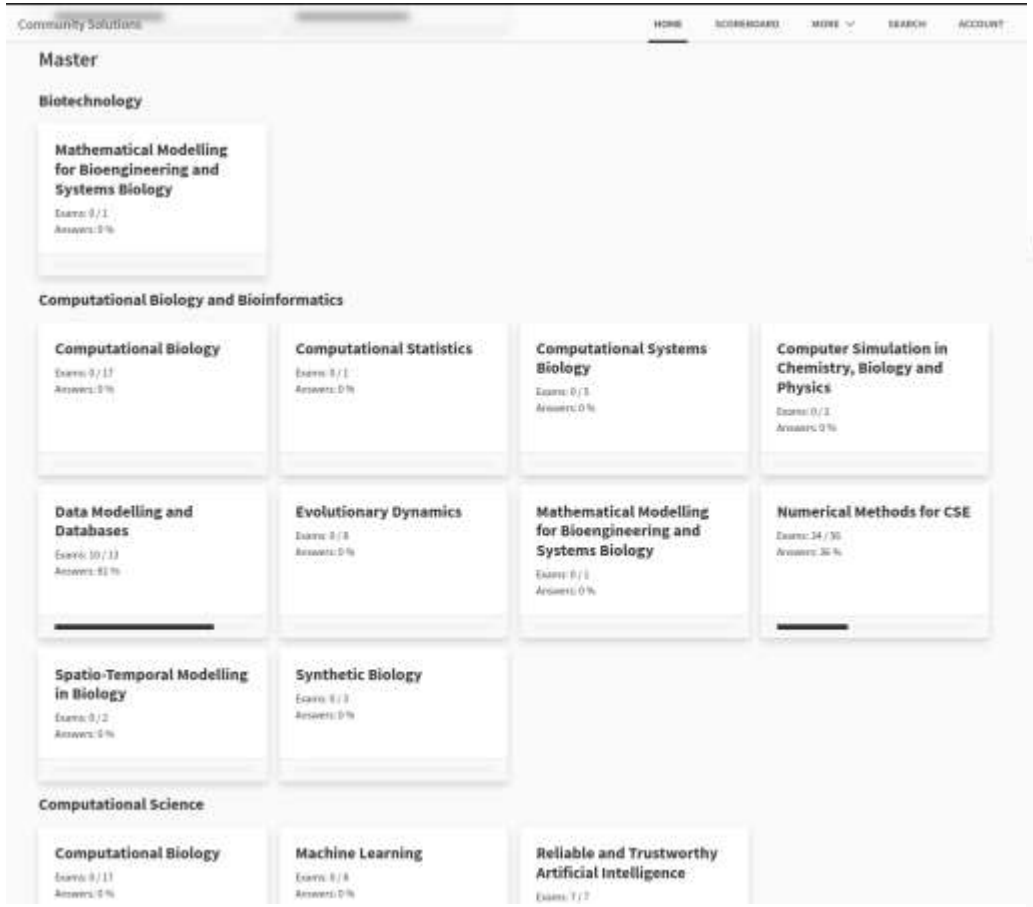
VISIONEN – our Magazine

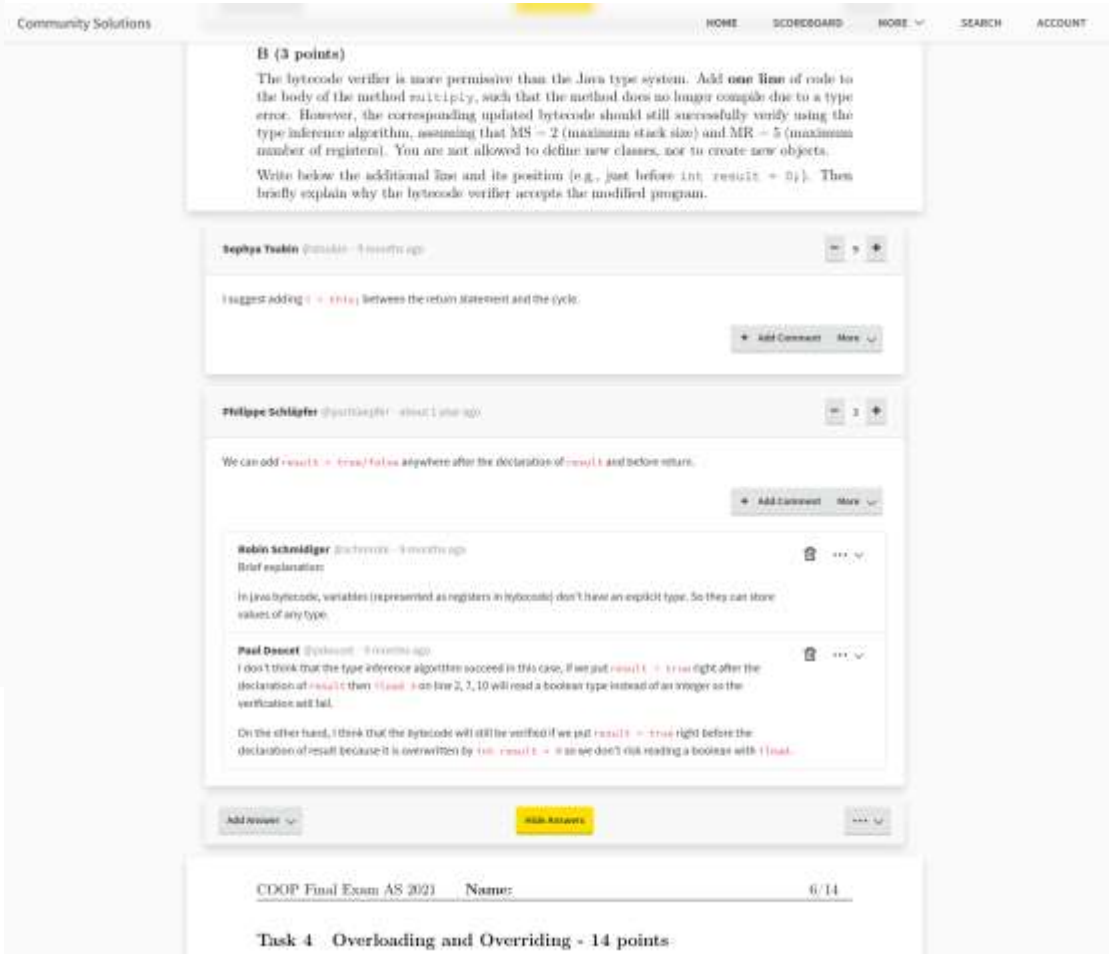
Will soon arrive in your mailboxes!



Common Room – free Coffee and Beer

Exam Collection (exams.vis.ethz.ch)



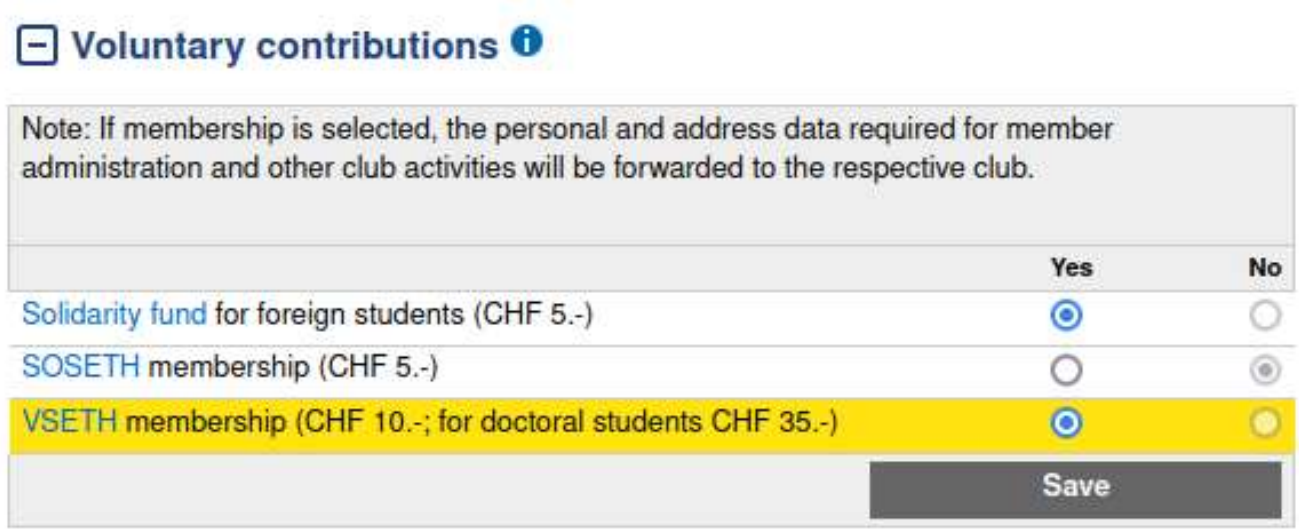


University Politics

- 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

How to become a Member

On your myStudies select the VSETH membership under voluntary contributions.



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

VIS Socials

instagram.vis.ethz.ch

whatsapp.vis.ethz.ch

VIS

WhatsApp group

Further Information

- Website: vis.ethz.ch
- Ask the board: vis@vis.ethz.ch
- Ask the MoEB committee: moeb@vis.ethz.ch
- Ask your tour guide

Up next: Campus Tour & BBQ

Thank you!