



# Master Program in Informatics: Artificial Intelligence

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# Ifl: The Department of Informatics



- Founded in 1970 (Ifl = Institut für Informatik)
- Part of the Faculty of Business, Economics and Informatics
- Focus on human-centered informatics
- 19 Professors, 130 PhD students and Post-Docs
- 500 Bachelor's students
- 520 Master's students
- Campus Oerlikon

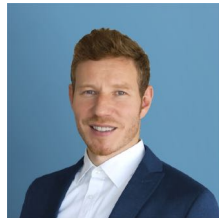
 **You!**





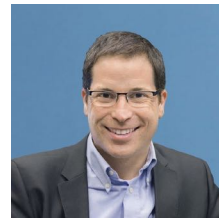
**Alberto Bacchelli**

Zurich  
Empirical  
Software Engineering  
Team



**Jürgen Bernard**

Interactive  
Visual  
Data  
Analysis Group



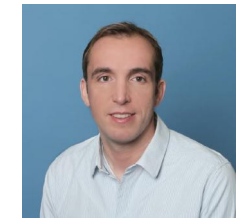
**Abraham Bernstein**

Dynamic and  
Distributed  
Information  
Systems Group



**Michael Böhlen**

Data-  
Base  
Technology  
Group



**Thomas Fritz**

Human  
Aspects of  
Software  
Engineering



**Harald Gall**

Software  
Evolution and  
Architecture  
Lab



**Manuel Günther**

Artificial  
Intelligence and  
Machine  
Learning Group



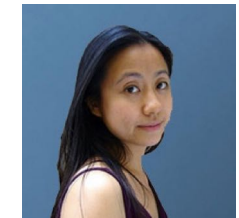
**Anikó Hannák**

Social  
Computing  
Group



**Lorenz Hilty**

Informatics and  
Sustainability  
Research Group



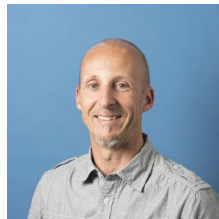
**Elaine Huang**

Zurich  
People  
and  
Computing Lab



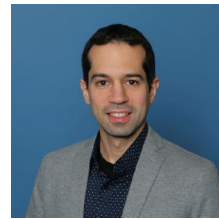
**Dan Olteanu**

Data  
Systems and  
Theory Group



**Renato Pajarola**

Visualization and  
Multi-  
Media  
Lab



**Davide Scaramuzza**

Robotics and  
Perception  
Group



**Ingo Scholtes**

Data  
Analytics  
Group



**Gerhard Schwabe**

Information  
Management  
Research  
Group



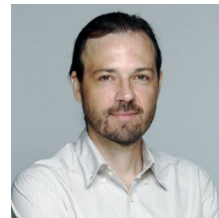
**Sven Seuken**

Computation and  
Economics Research  
Group



**Burkhard Stiller**

Communication  
Systems  
Group



**Claudio Tessone**

Blockchain and  
Distributed  
Ledger  
Technologies



**Martin Volk**

Computational  
Linguistics

# General Information Online

Dean's Office: <https://www.oec.uzh.ch/en/studies.html>

- Study Regulations, Admission, Enrollment, Changing Programs, Course Booking, Important Dates, Petitions/Appeals, ...

IFI: <https://www.ifi.uzh.ch/en/studies/msc-info.html>

- Specific to Informatics: Fact Sheets (legally binding!), Topics/Professors, Tutors/TAs, also these slides for later reference

**Please read the regulations and fact sheets!**

The presentations held at the **Faculty's Master Welcome Day** are available from:

<https://www.oec.uzh.ch/en/studies/events/mwd.html>



# Structure of the MSc Programs



All programs comprise...

- a compulsory module
- a Master's Project (group work!)
- modules from core/elective areas
- a Master's Thesis at the end

More on these components  
on the next slides...

Five Major MSc study programs					90 ECTS credits
Information Systems IS	Software Systems SOSY	People-Oriented Computing POC	Artificial Intelligence AI	Data Science DS	
Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	
Master's project 15 ECTS					
Core elective area 18 ECTS	Core elective area 18 ECTS	Core elective area 18 ECTS	Core elective area 18 ECTS	Core elective area 18 ECTS	
INF elective area 15 ECTS					
WWF elective area 6 ECTS					
Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	

This course

## Advanced Topics in Artificial Intelligence

- **Time:** Wednesdays 8:15 -12:00h
- **Room:** BIN 1.B.01
- **Grading**
  - **Final Exam:** Wednesday, 26.01.2023, 14:00-16:00 **BYOD!** → Location to be announced
  - Practice Exam (TBA)
  - Assignments (20%)
  - Active participation to the evaluation event on the 14.12. and 21.12.
- **Prerequisites:**
  - General: Calculus, Linear Algebra, Probability Theory, Design and Analysis of Algorithms
  - You have taken an intro class on AI (roughly, AIMA 4<sup>th</sup> Ed., chapters 1-18)
  - You are familiar with basic Data Mining / Machine Learning techniques
- **Content:**
  - Knowledge in AI, Large-scale AI, Collective Intelligence, AI & Society

The Master's Project...

- is a **group project** (= min. 2 students)
- is an **intensive and demanding** project worth 15 ECTS credits
- best time: During semester break
- max. 12 months to complete
- must be supervised by an IfI professor

→ **Check the fact sheet!**

IfI organizes a **Master's Project Market** each semester

→ Some open projects are presented and you can find peers



# Elective Areas



## Core elective area

Specific to your Major study program  
(IS, SOSY, POC, AI, or DS; see next slide).

## INF elective area

All modules offered by IfI on the Master's level  
(definition in the Study Regulations, p. 31)

## WWF elective area

All modules offered by WWF on the Master's level  
(definition in the Study Regulations, p. 31)

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WWF elective area 6 ECTS					
Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	Master's thesis 30 ECTS	

# AI Major – Core Electives and Instructors



Advanced Machine Learning (from FS22)	Lena Jäger
Advanced Techniques of Machine Translation	Rico Sennrich
Algorithmic Game Theory and Mechanism Design*	Sven Seuken
Combinatorial Algorithms	Alexander Souza
Computer Graphics	Renato Pajarola
Deep Learning	Manuel Günther
Essentials in Text and Speech Processing	Mathias Müller
Machine Learning for Natural Language Processing 1	Simone Clematide
Network Science	Claudio Tessone
Randomized Algorithms	Alexander Souza
Statistical Foundations for Finance (Mathematical and Computational Statistics with a View Towards Finance and Risk Management)	Marc Paoletta
Vision Algorithms for Mobile Robotics	Davide Scaramuzza
Real Analysis I	Marc Paoletta

## The Master's Thesis...

- must be written in your **Major area**
- is a **full-time endeavor** worth 30 ECTS credits (i.e., no significant side jobs or other study activities possible)
- max. 6 months to complete
- can only be started once the Master's Project has been successfully completed
- must be supervised by an IfI professor

→ **Check the fact sheet!**

→ Find topics on the IfI website (check the individual group pages) or contact the groups directly.

Five Major MSc study programs					90 ECTS credits
Information Systems	Software Systems	People-Oriented Computing	Artificial Intelligence	Data Science	
IS	SOSY	POC	AI	DS	
Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	Compulsory module 6 ECTS	
Master's project					
15 ECTS					
Core elective area	Core elective area	Core elective area	Core elective area	Core elective area	
18 ECTS	18 ECTS	18 ECTS	18 ECTS	18 ECTS	
INF elective area					
15 ECTS					
WWF elective area					
Master's thesis	Master's thesis	Master's thesis	Master's thesis	Master's thesis	
30 ECTS	30 ECTS	30 ECTS	30 ECTS	30 ECTS	

## Seminar

- one seminar is mandatory
- recommended from 2nd semester
- check the Course Catalogue early and register for the seminar within the seminar's application deadline

*Note: this deadline is shorter than the regular module booking deadline!*

## Independent Study

- optional module
- **Check the fact sheet!**

## External Modules

- ETH: <https://www.oec.uzh.ch/en/studies/credits/external-eth.html>
- Mobility within Switzerland: <https://www.uzh.ch/cmsssl/en/studies/application/chmobilityout.html>
- International exchange: <https://www.int.uzh.ch/en/out.html>
- Partner universities: <https://www.oec.uzh.ch/en/international/engagement.html>

## Study programs (18)

> Major 90

▼ Minor 30 - Faculty of Business, Economics and Informatics

Informatics

Data Science

Information Systems

Economics

Business Administration

Banking and Finance

▼ Minor 30 - Other Faculties

Bioinformatics

Biology

Chemistry

Computational Linguistics and Language Technology

Geography

Mathematics

Physics

**Available Minor programs are listed in the Course Catalogue:**

<https://studentservices.uzh.ch/uzh/anonym/vvz/index.html>

➤ Master of Science UZH in Informatics (RVO22) > Minor 30

*Note: Modules in the „Minor area Informatics (INF)“ are offered only in the Fall semester. There are no modules in the „Minor area Informatics“ in the Spring semester. Take this into account when planning your next few semesters.*

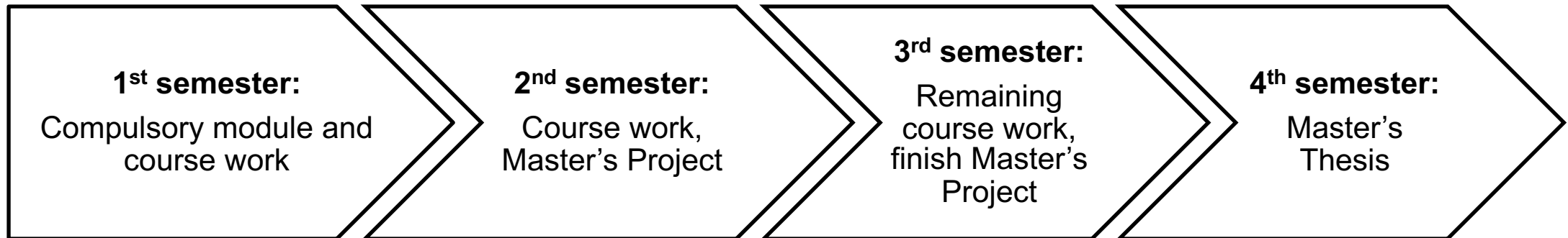
You can change your Minor under certain conditions:

<https://www.oec.uzh.ch/en/studies/general/enrollment/change.html>

# Hints (1/3)



- **Focus on the compulsory modules** in your Major and Minor programs
- **Make a study plan** → Check course schedule of previous years for planning. Courses often stay in the same slot. **Suggested order:**



- **Read the fact sheets** well before starting the respective module or thesis
- All legally binding information regarding modules, incl. exam dates, are in the UZH Course Catalogue. Most modules additionally have a website or OLAT course, but **the Course Catalogue is binding.**

# Hints (2/3)



- **Check the study websites** of the Faculty and the Department:
  - <https://www.oec.uzh.ch/en/studies.html>
  - <https://www.ifi.uzh.ch/en/studies/msc-info.html>
- Note that **booking/cancellation deadlines** may vary between faculties.
- Working at IfI: Some modules/courses seek **Tutors or Teaching Assistants**. Check out <https://www.ifi.uzh.ch/en/studies/msc-info.html> and the individual group pages.
- Mentoring, social events, representatives: Informatics **student association ICU**: <https://icuzh.ch>

- **Consider the policies on plagiarism and scientific integrity.** You find the fact sheet on plagiarism on this website:
  - <https://www.ifi.uzh.ch/en/studies/msc-info.html>
  - The Swiss Academies of Arts and Sciences issued a **Code of conduct for scientific integrity:** <https://akademien-schweiz.ch/en/themen/scientific-culture/scientific-integrity-1/>
- UZH provides a number of **advice and support services** for topics such as Gender Equality and Diversity, Disability, or Psychological Counseling:
  - <https://www.students.uzh.ch/en/advice.html>
- **Practise passive and active English without tools** (in exams, no translation tools are permitted)
  - UZH offers English courses: <https://www.sprachenzentrum.uzh.ch/en/Sprachkurse/Englisch.html>





# Questions/Whom to Contact

**If you have questions, please follow these steps:**

1. Read the Study Regulations: <https://www.oec.uzh.ch/en/studies/regulations.html>
2. Read the Ifl's study information and fact sheets: <https://www.ifi.uzh.ch/en/studies/msc-info.html>
3. Check information in the Course Catalogue: <https://studentservices.uzh.ch/uzh/anonym/vvz/index.html>
4. Send e-mail to the respective person:

For questions about

- Master's Project
- Independent Studies
- Master's Thesis
- Informatics studies in general

Contact the Ifl's Study  
Coordinator, Daniela Bärtschi:  
[studies@ifi.uzh.ch](mailto:studies@ifi.uzh.ch)

For questions specific to a course: Contact the instructor.

For everything else, contact the Dean's Office:  
<https://www.oec.uzh.ch/en/staff/team.html> (Study Affairs)

And of course you can ask your fellow students, for example by  
joining the student association ICU: <https://icuzh.ch>

# Did you know?

The Informatics Library is part of the UB Sciences on the Irchel campus!

Books can be delivered to Oerlikon free of charge:

Simply select “UB Psychology” as pick-up location in swisscovery.

<https://t.uzh.ch/1mr>

or <https://www.ub.uzh.ch/en>

