



Master program in Informatics: Data Science

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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

A large blue arrow pointing from the word 'You!' towards the list of statistics.

You!





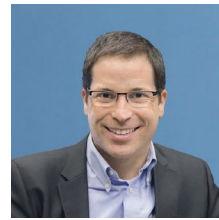
Alberto Bacchelli

Zurich
Empirical
Software Engineering
Team



Jürgen Bernard

Interactive
Visual
Data
Analysis Group



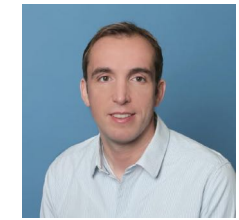
Abraham Bernstein

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



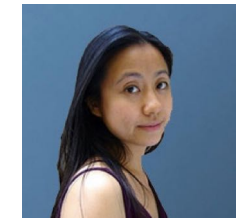
Anikó Hannák

Social
Computing
Group



Lorenz Hilty

Informatics and
Sustainability
Research Group



Elaine Huang

Zurich
People
and
Computing Lab



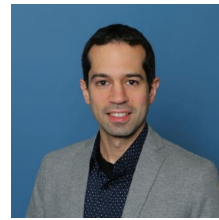
Dan Olteanu

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



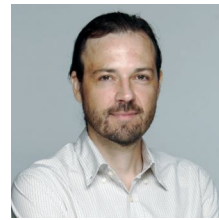
Sven Seuken

Computation and
Economics Research
Group



Burkhard Stiller

Communication
Systems
Group



Claudio Tessone

Blockchain and
Distributed
Ledger
Technologies



Martin Volk

Computational
Linguistics

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	

The compulsory module is specific to your study program.

For Data Science: Foundations of Data Science

- Covers introductory topics to machine learning
- Main focus on the mathematical underpinning of why and how
- Strong practical component requiring programming
- Prerequisites
 - Programming: Prior exposure to any programming language is useful and necessary
 - Mathematics: Linear algebra, Multivariate calculus, Probability theory

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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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	

Core Elective Area: Data Science (1/3)



- **Data Management**
 - Systems for Data Science
 - Temporal and Spatial Data Management
 - XML and Databases
 - Praktikum Datenbanksysteme
- **Algorithms**
 - Combinatorial Algorithms
 - Randomized Algorithms
 - Efficient Algorithms for Frequently Asked Questions

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Core Elective Area: Data Science (2/3)



- **Machine Learning & Statistics**
 - **Foundations of Data Science (compulsory)**
 - Deep Learning
- **Data Visualization**
 - Introduction to Interactive Visual Data Analysis
- **Ethics**
 - Artificial Intelligence: Technology and Law

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					
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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	

Core Elective Area: Data Science (3/3)



- **Data Science Applied in Economics and Business Administration**
 - Machine Learning for Economic and Policy Analysis
 - Statistical Foundations for Finance
(Mathematical and Computational Statistics
with a View Towards Finance and Risk Management)
 - Network Science
 - Blockchain and Crypto Economics

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	

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 (any IfI professor can do this)

→ **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
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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>

Note on External Courses



A course from another university may be counted against the Data Science core elective stint only if:

- It is directly relevant to Data Science,
- It is of a good scientific standing, teaching principles as opposed to a hands-on tutorial on using Data Science tools, and
- It does not overlap significantly with the Data Science core electives.

Data Science on the IfI web page:

- <https://www.oec.uzh.ch/en/studies/master/it/ds.html>

It is possible to change the Major under certain conditions:

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

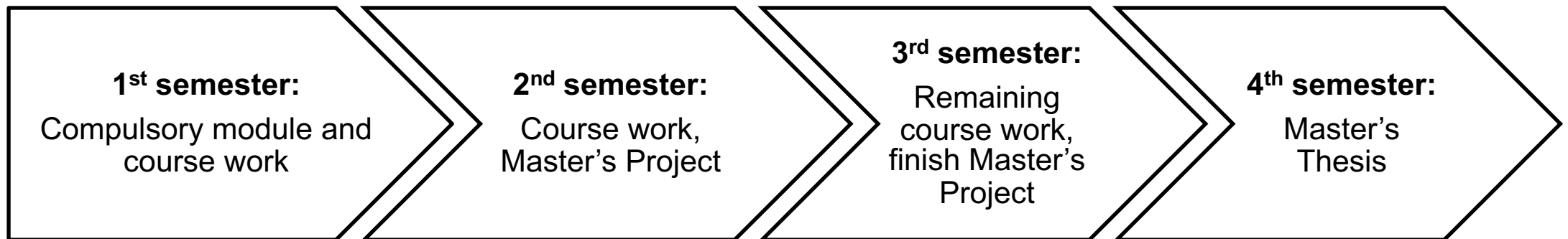
You can change your Minor under certain conditions:

<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 IfI'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 IfI's Study
Coordinator, Daniela Bärtschi:
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>

