



# **PhD SCHOOL IN COMPUTER SCIENCE**

Department of Computer Science, Systems and Communication

University of Milano-Bicocca

XXXVII - 2021/22



## PhD SCHOOL IN COMPUTER SCIENCE



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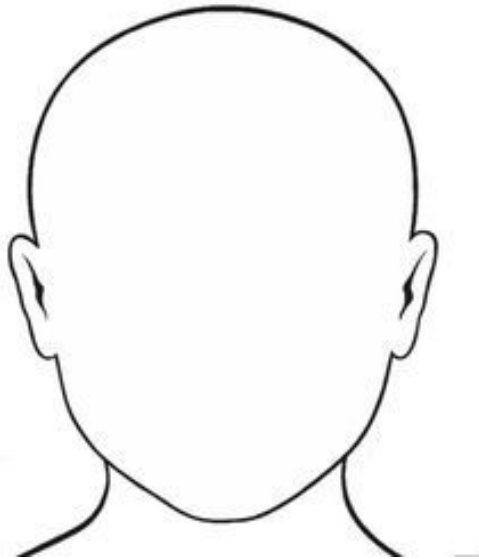


**PhD Office**

e-mail: [dottorati@unimib.it](mailto:dottorati@unimib.it)

Tel 02 6448 6488 (dott. Alghisi)

## Introduce Yourself



Name

Where you come from (previous  
etc.)

Research interests

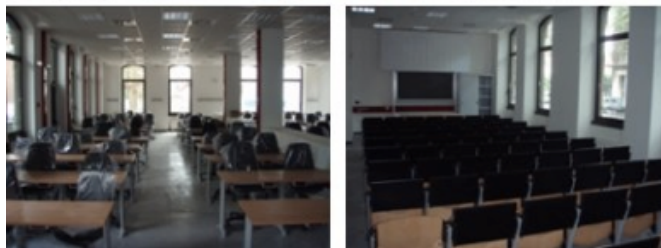
...

Surname	Name
Alva Principe	Renzo Arturo
Amianto Barbato	Jessica
Avila Cartes	Jorge
Bernasconi	Alice
Deola	Simone
Famiglini	Lorenzo
Gabardi	Matteo
Kashif	Kaleem
Kasela	Pralev
Lazzarinetti	Giorgio
Moiraghi Motta	Federico
Porto	Francesco
Rizzi	Giulia
Rota	Claudio
Talpini	Jacopo
Zanga	Alessio

Stranieri Francesco  
Agarla Mirko



## Department of Computer Science, Systems and Communication



### RESEARCH AREAS

Foundations of Computer Science, Computational Life Sciences and Bioinformatics

Software Engineering and Architecture

Web and Information Systems

Intelligent Sensing (Robotics, Real-Time Systems, Computer Vision)

Artificial Intelligence and Decision Systems



## Scientific Board (cycle XXXVI)

### Department Members

Prof. Francesca Arcelli Fontana

Prof. Stefania Bandini

Prof. Simone Bianco

Prof. Paola Bonizzoni

Prof. Federico Cabitza

Prof. Gianluigi Ciocca

Prof. Davide Ciucci

Prof. Gianluca Della Vedova (Deputy Director)

Prof. Alberto Dennunzio

Prof. Elisabetta Fersini

Prof. Alberto Leporati

Prof. Guglielmo Lulli

Prof. Leonardo Mariani (Director)

Prof. Enza Messina

Prof. Daniela Micucci

Prof. Matteo Palmonari

Prof. Rafael Penaloza

Prof. Yuri Pirola

Prof. Claudia Raibulet

Prof. Raffaella Rizzi

Prof. Fabio Sartori

Prof. Marco Savi

Prof. Raimondo Schettini

Prof. Fabio Stella

Prof. Marco Viviani

Prof. Giuseppe Vizzari

Prof. Claudio Zandron

Prof. Italo Zoppis

### External Members

Prof. Hanbury Alan (TU Wien)

Prof. Schahram Dustdar (Technical University of Vienna)

Prof. Diego Klabjan (Northwestern University)

Prof. Gregory Kucherov (University Paris-Est Marne-la-Vallée)

Prof. Fraser Gordon (University of Passau)

Prof. Peter Lucas (Leiden University)

Prof. Bhubaneswar Mishra (New York University)

Prof. Katsuhiko Nishinari (The University of Tokyo)

Prof. Paolo Rosso (Universitat Politècnica de València)

Prof. Alain Trémeau (University Jean Monnet Saint-Etienne)



## Doctoral Program

The main objective of the PhD program in Computer Science is to prepare **highly-qualified researchers** to conduct research, work and teach in fundamental and applied topics of the discipline, to design and develop complex IT systems, innovative applications with information and communication technology in different application domains.

To achieve this goal, the students will learn **scientific contents and methods, design capabilities and practical skills**.

The doctoral program is organized in **cycles**

- Every year new students enter the program (each year a new “cycle”)
- After 3 years (after 4 for some industry positions) students defend their theses



## PhD SCHOOL IN COMPUTER SCIENCE

### CYCLE XXXVII (16 students)

Alva Principe Renzo Arturo

Amianto Barbato Jessica

Avila Cartes Jorge

Bernasconi Alice

Deola Simone

Famiglini Lorenzo

Gabardi Matteo

Kashif Kaleem

Kasela Pralev

Lazzarinetti Giorgio

Moiraghi Motta Federico

Porto Francesco

Rizzi Giulia

Rota Claudio

Talpini Jacopo

Zanga Alessio

### Positions

- Scholarships from the **ministry** of research and education: 5
- Scholarships from National and International **projects**: 3
- Scholarships from **partners**: 2
- **Industry** positions (students hired by industry): 5
  - Time split between university and industry
- **No scholarship** (still possible to be hired by university/industry): 1

# Tutor

- Each student is **assigned a tutor**
- The tutor **IS NOT** a scientific supervisor
- The tutor will **help the student** interacting with the phd board and the academic institution
  - The tutor gives advices about your **life as phd student**
- Make sure to **meet your tutor** once before the end of the year
- The tutor is **assigned by the phd board**



# Tutors

Surname	Name	Tutor
Alva Principe	Renzo Arturo	Stella
Amianto Barbato	Jessica	Sartori
Avila Cartes	Jorge	Cabitzza
Bernasconi	Alice	Savi
Deola	Simone	Fersini
Famiglini	Lorenzo	Lulli
Gabardi	Matteo	Zandron
Kashif	Kaleem	-
Kasela	Pralev	Zoppis
Lazzarinetti	Giorgio	Arcelli
Moiraghi Motta	Federico	Bianco
Porto	Francesco	Peñaloza
Rizzi	Giulia	Micucci
Rota	Claudio	Pirola
Talpini	Jacopo	-
Zanga	Alessio	Viviani

# Courses and Credits

- **Specialized courses:** deal with *advanced topics* to illustrate the frontiers of the research and development in Computer Science
- **Interdisciplinary Courses:** deal with soft skills and topics of general interest
- As part of the phd program, you **have to** take at least
  - **10 credits** specialized courses
  - **2 credits** of interdisciplinary courses
- **Credits**
  - 1 credit about 25 hours of work (8 hours in the classroom + 17 hours offline work)
  - 1 specialized course is typically 20 hours long for a total of 2.5 credits, that is, you have to take about 4 courses in 3 years
  - Interdisciplinary courses have variable lengths

# Obtaining Credits

- You must **pass a final exam**
  - **Only attending** a specialized course is not enough to get the credits
  - However, you are also encouraged to **just attend courses**
    - Open your mind to techniques, methods, approaches taken from completely different disciplines
    - Brilliant ideas are everywhere and contamination across areas is incredibly important
- **Summer schools**
  - If the summer school **includes an exam**, the summer school can be turned into credits
    - Number of credits defined by the coordinator/deputy coordinator regardless of the credits specified in the certificate
  - If the summer school **does not include an exam**, you can give an internal seminar to obtain credits
  - contact us to know the number of credits that will be awarded
- **External courses**
  - See summer schools

# List of courses for this year

## ***Specialized courses 21-22***

*December 2021:* From Wearable Expert Systems to Wearable Environments:  
Definitions, Models and Future Challenges, **Savi, Sartori**

*February/March 2022:* The many facets of uncertainty in computer science,  
**Cabitza, Ciucci**

*April/May 2022:* Population-Based Optimisation Methods, **Manzoni, Pirola**

*June 2022:* Automated Analysis of Software and Models, **Braione, Denaro**

*July 2022:* Deep Learning, **Fersini**

*Sept-Oct 2022:* Neural Symbolic Computation, **Fiorino, Penaloza, Zoppis**

## ***Specialized courses 22-23***

- To appear around January 2022

- You must enroll in a course at least 1 week before its starting date.
- Sometime, we will ask for your intention 1-2 months before the beginning of the course, to check for the size of the class.
- Attending courses is super important

# Website

ALMOST EVERYTHING AVAILABLE ON THE WEBSITE OF OUR  
PHD PROGRAM

<https://phd-computer-science.disco.unimib.it>

# Interdisciplinary Courses

Check list and dates at <https://www.unimib.it/didattica/dottorato-ricerca/scuola-dottorato/corsi-interdisciplinari/corsi-interdisciplinari-interdisciplinary-courses>

- Some courses may start soon...
- You must enroll for a course to attend it
- Frequency is mandatory
- More info on the University Welcome meeting scheduled for Dec 1, 2021.

# Other Courses

- English courses
- Italian courses for foreign students
  - Contact [segreteria.lingue@unimib.it](mailto:segreteria.lingue@unimib.it) for information
  - <https://www.unimib.it/didattica/lingue-unimib>
- Rosetta Stone
  - <https://www.unimib.it/didattica/lingue-unimib/corsi-lingua-rosetta-stone>
  - Free online courses
- You may attend courses from the CS degree if useful

# Background Gaps for Non-Computer Scientists

- The students who have not a degree in CS must **contact the director** and the **deputy director** to setup a meeting
- In the meeting, we will **check your CV** and discuss your research field with you to identify relevant gaps in your background, if any
- Gaps are not general, but **related to your future research activity**
- You may receive **recommendations** about bachelor/master degree courses to attend.



# Research

- **Supervisor**
- Co-Supervisor (**optional**)
- Project/industry positions may have the supervisors already defined
- The supervisor must be identified **by the end of the 1<sup>st</sup> year**
- 1 between the supervisor and the co-supervisor **MUST** be professor @ UniMiB

# Research

- **Abroad period**
  - minimum 6 months (blended visiting periods are allowed now due to pandemics)
    - Industry positions have no minimum
  - It must be authorized (by the phd board)
    - Request to be submitted at least 1 month before leaving
  - Increase of salary for positions with scholarships
    - Industry positions and «no scholarship» positions are excluded from the increase



## Resources

Each student is **equipped** with free access to digital libraries (e.g., campus + IEEE, ACM, Springer, ...), email services (check the email!), and campus WiFi

Place@university in the research labs.

### Research budget

- €3,000 (approximatively 1K/year)
- For **travels** (conferences, summer schools, visiting)
- The travel must be **authorized** by the coordinator
  - Procedure available online
- For a **laptop**, only if strictly necessary
  - If possible, use a laptop from your research group/company
  - If not possible, we will reuse the laptops we already have from former students
  - Otherwise, the student can **use part of his/her budget** to buy a new laptop
    - In all the cases the laptop is owned by the university

# Budget source

- **phd school**: all cases but students hired on internal projects
- **project**: students hired on internal projects
  - Authorization directly from the **owner of the funding**

Project	Student	Supervisor
ITN	Avila Cartes Jorge	Prof.ssa Bonizzoni

# Annual Exams

- **Phd Talks** - April-June
  - Students are invited to **volunteer for talks** at any time (to receive feedback, to prepare for conferences, ...)
    - “New event this year, to be defined”
- **End of the year** exam (pass/fail) - September
  - For **1<sup>st</sup>** and **2<sup>nd</sup>** year students
  - **Presentation** (info about content and schedule online)
  - Mandatory **Report** from 2<sup>o</sup> year
- **Final exam rehearsal** - January
  - **3<sup>rd</sup>** year students
  - **Presentation** (to get ready for the actual defence)
- Every year **enroll** for the next year
  - First year fixed installment
  - Second and third years, it depends on the ISEE

# Final Defense

- Once the (3<sup>rd</sup>) year exam has been passed and admission to final defense is confirmed
- **Submit the thesis** (typically by end of Oct)
  - Evaluated by **2 external reviewers**
  - Each reviewer: **minor/major judgment**
    - Decision: **minor** (if 2 minors), **major** (if 2 majors), **minor or major** decided by the phd board (if 1 minor and 1 major)
    - Minor: 1 month to submit final version, Major: 6 months to improve the work and submit major revision, which is **again reviewed** by the external reviewers
- **Final defense** (typically in Feb)
  - **Presentation** in front of a committee (members can be **internal and/or external**)
  - **Pass/fail outcome with a score**
- **Doctor Europaeus**
  - **External reviewers** must be from EU non-IT countries
  - Evaluation must be **2 minors**
  - **1 member** of the final committee must be from an EU non-IT country
  - **Defense** must be in English
  - The student has spent **at least 3 months** in an EU non-IT country



## **Paid activity**

Teaching **up to 40 hours per year**. Activities must be authorized by the coordinator.

Extra income per year: **maximum €25,000** per calendar year

## Representatives of PhD Students



**Alessandro Tundo (XXXVI)**

[Alessandro.tundo@unimib.it](mailto:Alessandro.tundo@unimib.it)



**Lucrezia Patruno (XXXV)**

[l.patruno@campus.unimib.it](mailto:l.patruno@campus.unimib.it)



**Silvia Terragni (XXXIV)**

[s.terragni4@campus.unimib.it](mailto:s.terragni4@campus.unimib.it)

**Choose your representative at the end of this meeting and then inform us**

The representative facilitates interactions between the students and the phd board

- Regular meetings with the coordinator and the deputy coordinator

Duties:

- Collect feedback from students and report them to us
- Help us with the website
- Help with the organization of some activities (e.g., exams from remote)

Our suggestions:

- Choose an Italian student, to effectively interact with offices if needed
- Do not choose students with industry positions who may have strict time constraints



# Information Available on the Web

- <https://phd-computer-science.disco.unimib.it/>
  - Download and read the **PhD Guide** (vademecum)
  - Each ph.d. program may have its own **specific rules**
  - Read the online guides, there are useful **how-to** (e.g., how to travel)
- **Web Presence**
  - **Homepage** for each ph.d. student
  - To be **initialized** in the **next few months**
  - «**static**»: links to **external sources only**

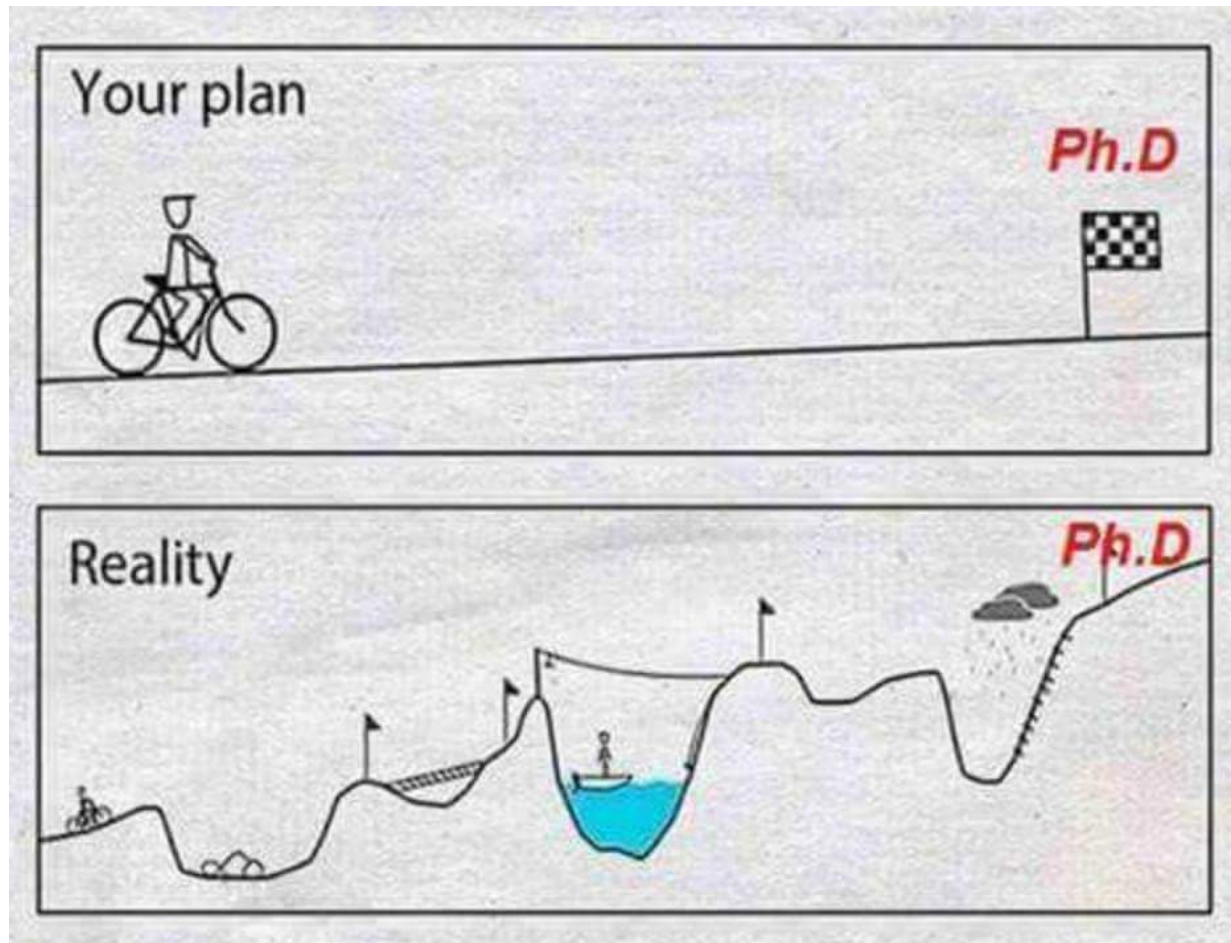
# Mailing Lists

- [phdcycle37-disco-groups@unimib.it](mailto:phdcycle37-disco-groups@unimib.it), only this cycle
- [dottorandi-disco-groups@unimib.it](mailto:dottorandi-disco-groups@unimib.it), all the phd students

# Don't be shy!

- Never hesitate to contact
  - The **phd representatives** for feedback and processes that can be improved (issues that may affect most of the students)
  - Your **tutor** for non-trivial problems about your ph.d. career that you cannot solve with your supervisor (personal issues)
  - The **coordinator** and the **deputy coordinator** for institutional problems (institutional issues + all the above)

# PhD is a Journey



# The Iceberg Illusion

Success  
is an  
iceberg

**SUCCESS!**

WHAT PEOPLE  
SEE

Persistence



Failure



Sacrifice



Disappointment



WHAT PEOPLE  
DON'T SEE

Dedication



Hard work



Discipline

