PhD SCHOOL IN COMPUTER SCIENCE

Department of Computer Science, Systems and Communication

University of Milano-Bicocca

XXXIX - 2023/24

PhD SCHOOL IN COMPUTER SCIENCE

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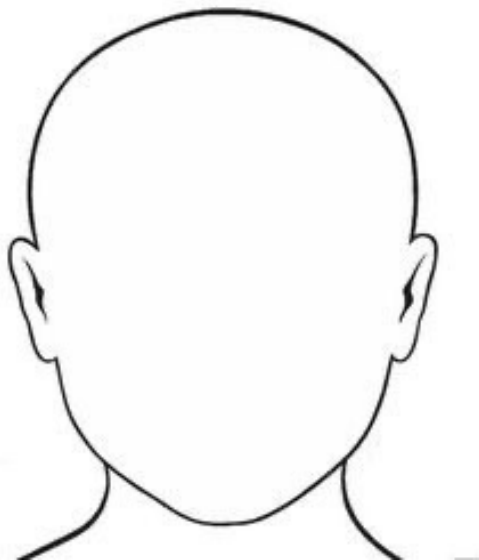e-mail: gianluca.dellavedova@unimib.it

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PhD Office

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Introduce Yourself

Surname	Name
ABUBAKARI	ALIDU
BARBERA	THOMAS
CANONACO	FRANCESCO
COGO	LUCA
D'ANTONA	SALVATORE
DI LAURO	FEDERICA
DI MARCO	FEDERICO
EFFROSYNI	SOKLI
FREGOSI	CATERINA
GALLO	GIOVANNI DONATO
LOCATELLI	MARCO
MACCARONE	FRANCESCA
MARINO	MARIO
MORANO	FRANCESCO
NADEEM	MUHAMMAD USAMA
PIAZZA	MARCO
PIROLA	FEDERICO
RICCARDI	BRIAN
RIGAMONTI	GIORGIA
ROCCHI	NICCOLÒ
SCALENA	DANIEL
SGRO	MATTIA
SWEILAM	MOHAMED NASSER HASSAN
VIGANÒ	GIULIO

- Name
- Where you come from (previous studies, etc.)
- Research interests
- ...

![University of Milano-Bicocca and DISCo logos]

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 XXXIX)

Department Members

Prof. Marco Antoniotti

Prof. Francesca Arcelli Fontana

Prof. Stefania Bandini

Prof. Simone Bianco

Prof. Paola Bonizzoni

Prof. Federico Cabitza

prof. Michele Ciavotta

Prof. Gianluigi Ciocca

Prof. Davide Ciucci

Prof. Gianluca Della Vedova (Deputy Director)

Prof. Alberto Dennunzio

Prof. Elisabetta Fersini

Prof. Alex Graudenzi

Prof. Alberto Leporati

Prof. Guglielmo Lulli

Prof. Leonardo Mariani (Director)

Prof. Simone Melzi (Quality Insurer)

Prof. Enza Messina

Prof. Daniela Micucci

prof. Paolo Napoletano

Prof. Dimitri Ognibene

prof. Gabriella Pasi

Prof. Rafael Penaloza

Prof. Yuri Pirola

Prof. Raffaella Rizzi

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 Allan (TU Wien)

Prof. Peter Lucas (Leiden University)

Prof. Bhubaneswar Mishra (New York University)

Prof. Antonio Martini (Univ. Oslo)

Prof. Paolo Rosso (Universitat Politècnica de València)

Prof. Alexander Schönhuth (Univ. Bielefeld)

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 XXXIX (23+1 students)

- Scholarships from the **ministry** of research and education: 5
- Scholarships from National and International **projects**: 14
- Scholarships from **partners**: 3+1
- **No scholarship** (still possible to be hired by university/industry): 1

Tutor

- Each <u>student</u> is **assigned a tutor**

- The tutor **IS NOT** a <u>scientific supervisor</u>

- The tutor will **help the student** interacting with the phd board and the academic institution

  - The tutor gives advices about you

- Make sure to **meet your t**

- The tutor is **assigned by**

Nominated by the end of the calendar year

Courses and Credits

- **Disciplinary 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
  - **8 credits** <u>disciplinary</u> courses
  - **3 credits** of <u>interdisciplinary</u> courses
- **Credits**
  - 1 credit about 25 hours of work (8/12 hours in the classroom + 17/13 hours offline work)
  - 1 disciplinary course is between 16 and 24 hours for a total of 2 credits, that is, you have to take 4 courses in the first 2 years
  - Interdisciplinary courses have variable lengths

Obtaining Credits

- You must **pass a final exam**
  - **Only attending** a disciplinary course is <u>not enough</u> 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
- **To cover the 8 credits, you have to take courses from the ones approved for your cycle**

List of planned courses

Disciplinary courses 23-24

- *From Wearable Expert Systems to Wearable Evironments: Definitions, Models and Future Challenges (Savi, Sartori)*
- *Deep Learning (Fersini)*
- *Neural Synbolic Execution (Fiorino, Penaloza, Zoppis)*
- *Geometry processing and machine learning for geometric data (Melzi, Marin)*
- *Sensor Fusion in e-Health and mobile-Health (Cisotto, Saibene)*
- *String Algorithms (Della Vedova, Rizzi)*

Disciplinary courses 24-25

- *Algorithmic Non-cooperative Game Theory (Passacantando)*
- *The Transformer architecture: variants and applications (Raganato)*
- *Introduction to Knowledge Graphs (Cremaschi, Spahiu, Rula)*

- 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 mandatory

Presentation of this year courses: Nov 8th 14:00 "Geometry processing…."

Nov 14th 11:30am, Sala Seminari, remaining courses

First course already starting in November!

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 during the University Welcome scheduled for Nov 16, 2023 10am

- **Responsible Research and Innovation (RRI)**
  - mandatory activity, usually it is a 1-day workshop
  - organized by the phd school

Other Courses

- English courses
- Italian courses for foreign students
  - Contact 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 do not have 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 <u>identify relevant gaps</u> 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 (no need to take the exam).

Research

- **Supervisor**
- Co-Supervisor (**optional**)
- Project/industry positions may have the supervisors <u>already defined</u>

- The supervisor must be identified **by the end of January 2024**
- 1 between the supervisor and the co-supervisor **MUST** be professor @ UniMiB

Research

- **Abroad** period
  - minimum **6 months**
    - 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
- €4,800 (approximatively 1.6K/year)
- For **travels** (conferences, summer schools, visiting)
- The travel must be **authorized** by the coordinator
  - Procedure available online
- For a **laptop,** only if 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
    - **If you need a laptop, let me know by the end of th day!**

Medical Insurance

- Foreign students have to enroll for the National Health Service
- Necessary to benefit of any service from the Italian Healthcare!
- No cost for EU students
- about €200/year for extra EU students
- Instructions: https://www.agenziaentrate.gov.it/portale/web/guest/italian-health-insurance-card-and-foreign-citizens

Initiatives

- **Phd Talks** – All over the year

    Students are invited to **volunteer for talks** at any time (to receive feedback, to prepare for conferences, …)

- **PhD Day** – Spring time

    1 day event dedicated to the phd program with invited talks, posters, etc.

- **PhD Colloquia** – 3-4 times a year

    Informal meeting to discuss topics relevant to phd students.
    There is a target audience
    Next one planned for **Dec 1st, 2023 at 2:30pm** about writing review response and rebuttals

Annual Exams

- **End of the year** exam (pass/fail) - September
  - For **1st** and **2nd** year students
    - **Presentation** (info about content and schedule online)
    - **Report of activities to be shared with the tutor**
  - For **3rd** year students
    - **Report of activities to be shared with the tutor**
- **Final exam rehearsal** - January
  - For **3rd** year students
    - **Presentation** (to get ready for the actual defence)
- Every year **enroll** for the next year
  - Enrolment tax depends on ISEE
  - **<u>Don't forget to submit ISEE by the deadline, otherwise you will pay max taxes</u>!**

Final Defense

- Once the (3rd) year exam has been passed and <u>admission to final defense</u> is confirmed
- **Submit the thesis** (typically by end of Oct)
  - Evaluated by **2 external reviewers**
  - Each reviewer: **accept/minor/major revision**
    - Trivial if the two reviews make a same recommendation!
    - Decision: **minor** (if 2 accept/minor), **major** (if 2 minor/major), **minor or major** decided by the <u>phd board</u> (if 1 accept and 1 major)
    - Minor: <u>1 month</u> to submit final version, Major: <u>6 months</u> 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**

Paid activity

Teaching (lab + exercise) **up to 40 hours per year**.
Tutorship: up to €2.500 per year

Extra income per year: **the same than 1 year of scholarship** per calendar year

All the activities must be <u>authorized by the director/phd board</u>.

Representatives of PhD Students

Federica di Lauro (XXXIX)

f.dilauro2@campus.unimib.it

Vasco Coelho (XXXVIII)

v.coelho@campus.unimib.it

Lorenzo Famiglini (XXXVII)

l.famiglini@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
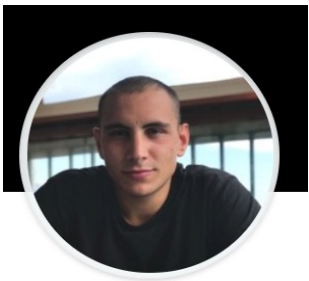- Help with the organization of some activities (e.g., exams from remote)

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**
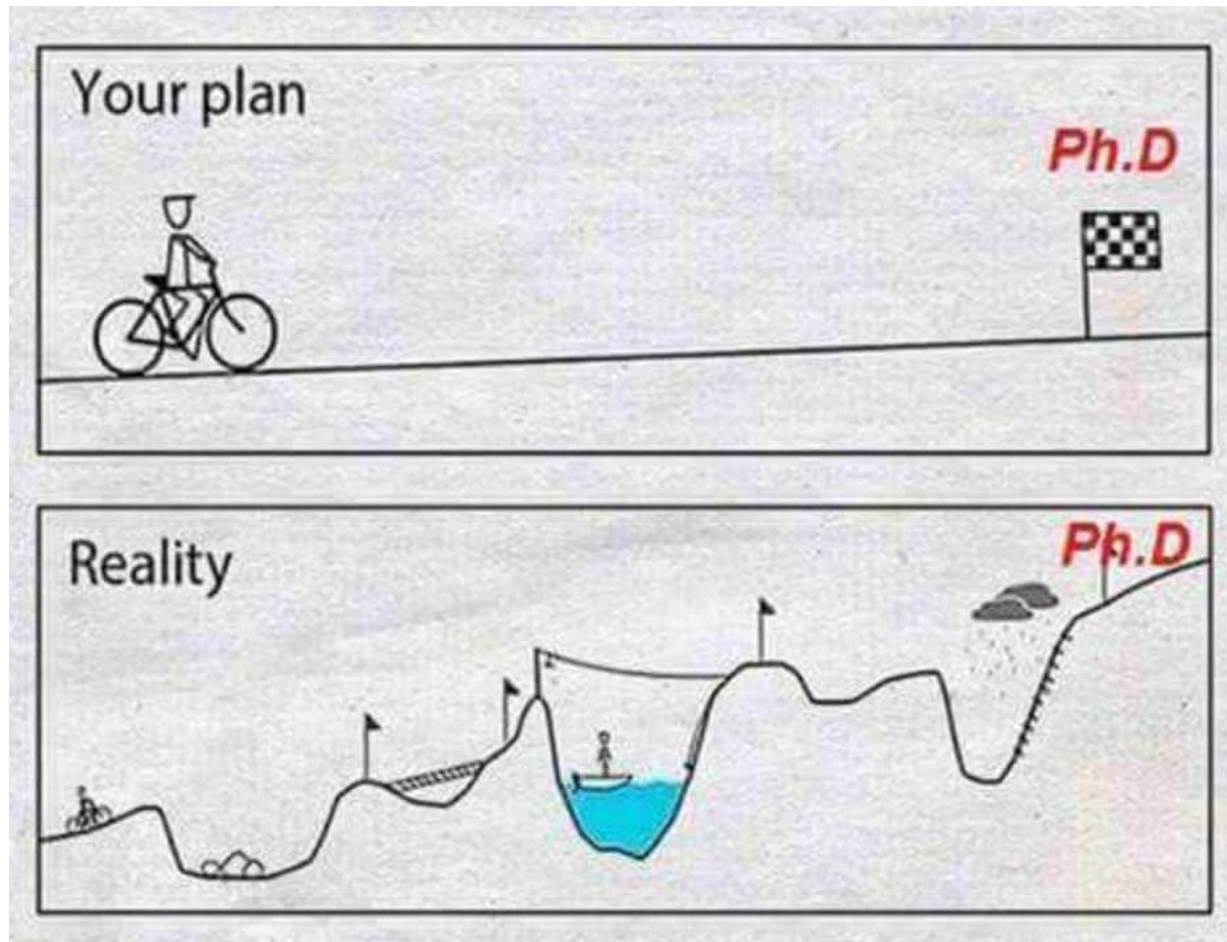 - **«static»:** links to **external sources only**

Mailing Lists

- phdcycle39-disco-groups@unimib.it, only this cycle
- 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