PhD program in Computer Science and Technology

Duration: 3 years

Academic year: 2024/2025

Course start date: 01/11/2024

Course language: English

Webpage: https://www.unibz.it/en/faculties/computer-science/phd-computer-science/

COURSE PROGRAM

The aim of the program is for doctoral students to acquire the ability to carry out independent research in the field of computer science. This includes the ability to communicate ideas effectively both orally and in writing, and the ability to work in a team.

To successfully complete the study program, the doctoral student must independently develop a research topic in such a way as to significantly expand the state of knowledge in the field of computer science. In view of the time limitation of the program, it is necessary for the doctoral students to concentrate their efforts on research work. In view of this, doctoral students are supported by the structure of the research program.

This structure is explained in more detail below, together with the measures relating to the appointment of the supervisor, the formulation of the research and study plan and the moments for verification:

- The program is divided into four phases, ending in months 6, 12, 24 and 36 respectively.
- For each doctoral student, the Board of Lecturers appoints a supervisor and at least one co-supervisor. At least one of the supervisors must be a member of the Scientific committee.
- Together with the team of supervisors, the doctoral student draws up a research and study plan, which defines the research objectives and the steps necessary to achieve them. These include the study of topics whose knowledge is necessary for the doctoral candidate's research work. The doctoral student periodically updates his/her research and study plan, considering the progress made and new developments that emerge in the field of research.

Each of the phases ends with a review stage during which the doctoral student presents his/her work, and the Scientific Board assesses the progress made. The updated research and study plan is one of the fundamental results of each follow-up moment.

STUDY PLACES

Total places: **1**

Financed by	No.	Research Project
ESF+ European Social Fund (research topic related)	1	Fast Parallel Hierarchical Matrix Solvers for Thermonuclear Energy Research (prof. Bruno Carpentieri)

ADMISSION REQUIREMENTS

The selection is open to candidates who possess the qualifications set out in Article 2 of this call, general section.

Other requirements:

Knowledge of the English language is required for admission to the PhD program in Computer Science.

The prerequisites for admission to the PhD program include having acquired an appropriate qualification, and/or having worked in the fields of the PhD course, in particular being able to demonstrate a thorough knowledge of the fundamental techniques and methods used in computer science.

Participants must be under 35 years of age, to be considered until the day before their 35th birthday. The requirement must be fulfilled at the time of the deadline of the relevant call for applications (2 October 2024).

LANGUAGE SKILLS REQUIRED

The official language of instruction is English. Therefore, applicants are required to have an excellent knowledge of English.

Proficiency in English will also be assessed during the interviews.

ONLINE APPLICATION AND REQUIRED DOCUMENTS

The application must be submitted exclusively online as per art. 3 of this call for applications, general part.

In addition to the documentation required by art. 3, for the PhD in Computer Science you must upload:

- **_Curriculum Vitae (CV)_** in English (possibly according to the European format downloadable here: https://europass.cedefop.europa.eu/it/documents/curriculum-vitae). The CV must be updated with data and information for the current year.
- **_Cover letter - Attachment A_** (in English in PDF format: you must use the relevant template in the "Attachment" section). Highlight your reasons for applying to the PhD program in Computer Science, your reasons for choosing unibz (in particular the Faculty of Engineering) and your career prospects after completing your PhD. Include a brief discussion of your general research interests, the questions and objectives you are interested in, and add a summary of the skills you have already acquired (e.g. in master's level research), as well as the techniques and methodologies you are interested in learning and applying in your PhD research.
- **_Research proposal - Attachment B_** (in English in PDF format: you must use the relevant template in the "Attachments" section). In this document, you have to develop a single project proposal. The proposal should therefore include:
    - a) a discussion of the state of the art;
    - b) aims and objectives of the planned research;
    - c) a discussion of the research methodology.

Additional documents to be attached to the application if available:

- A PDF file of up to THREE of your best publications (excluding theses);
- up to a maximum of TWO reference letters written in English by supervising university professors or researchers from research institutes, describing the type and quality of the work carried out (_letters MUST be signed_). Alternatively, reference letters can be sent by e-mail directly from the referees to phd.engineering@unibz.it (please indicate in the subject line of the e-mail: "Reference for "_NAME and SURNAME_" of candidate").

SELECTION PROCEDURES

Selection is based on:

- the assessment of each candidate's profile based on the curriculum vitae, academic qualifications, cover letter and research project proposal.
- the congruence with the research themes defined by the faculty for the present call.
- an evaluation of the letters of reference and publications; and
- an interview.

The following points are awarded:

- Up to a maximum of <u>45 points</u> for the CV, qualifications and publications, distributed as follows:
    - Qualifications, other qualifications, and work experience (up to 30 points).
    - Experience abroad, participation in summer schools and conferences, contributions to research projects, scholarships (up to 9 points).
    - Publications (up to 6 points)
- Up to a maximum of <u>6 points</u> for reference letters.
- Up to a maximum of <u>14 points</u> for the cover letter and research proposal on the basis of congruence with the research topics proposed in the call.

The Selection Board will select the best candidates based on a comparative evaluation. Candidates who obtain a score of at **<u>least 45 points</u>** in the evaluation of the admission documentation will be admitted to the next stage of the selection, which will consist of an oral interview in which knowledge of the English language will also be assessed. Remote interviews must take place via video call (MS Teams). A maximum of **35 points** can be obtained for the oral interview.

The *final score* is the sum of the score obtained in the evaluation of the documentation and the score obtained in the oral interview. The maximum score obtainable is 100.

Candidates who obtain a **minimum score of 70/100** in the assessment will be considered eligible. The ranking of successful candidates for admission to the PhD program is defined by the final score calculated as above. The best eligible candidates are admitted to the course according to the number of places available with and without a scholarship, in the order of their ranking. The remaining eligible candidates will be placed on a waiting list. Candidates on the waiting list will only be admitted to the course if an already admitted candidate withdraws from the course.