POLITECNICO DI MILANO

PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 41st cycle

Research Area n. 1 - Computer Science and Engineering

Number of scholarship offered	1
Department	DIPARTIMENTO DI ELETTRONICA, INFORMAZIONE E BIOINGEGNERIA

Description of the Research Area

The research in the Computer Science and Engineering Area of the PhD Programme in Information Technology at the Department of Electronics, Information and Bioengineering (DEIB) is organized along these lines:

•**System Architectures,** which deals with digital systems architecture and design methodologies for concurrent development of hardware and software components for embedded digital systems, including multi-core, reconfigurable and adaptive platforms.

•**Data, web, and society**: the research in this area addresses technologies, design methods, and tools for data management systems, information management and querying on the Web, and multimedia and multichannel communication.

•**Artificial intelligence and robotics**, devoted to the integration of Machine Learning, Computational Intelligence, Intelligent Data Analysis, Robotics, and Artificial Intelligence techniques for the development of intelligent systems and autonomous agents.

•**Advanced software architectures and methodologies**, which is focused on techniques, tools and frameworks for the development of complex software systems, characterized as distributed, pervasive, adaptive, reconfigurable, dynamic and critical.

•**Information Systems**, which deals with service-based and adaptive information systems, IT cost evaluation, and in particular green ICT and green software, information quality and security, and Web reputation, including semantic categorization and sentiment analysis of social media.
Further information:
- Research at the DEIB Department: https://www.deib.polimi.it/eng/
- PhD Programme in Information Technology (IT PhD): https://dottoratoit.deib.polimi.it/
- Computer Science and Engineering Section at DEIB: https://www.deib.polimi.it/eng/computer-science-and-engineering

PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 41st cycle

Research Area n. 1 - Computer Science and Engineering

OPEN SUBJECT Research Field: COMPUTER SCIENCE AND ENGINEERING

Monthly net income of PhDscholarship (max 36 months)
€ 1400.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	Research in Computer Science and Engineering at DEIB is organized along these lines: - **Information Systems**, which deals with servicebased and adaptive information systems, IT cost evaluation, and in particular green ICT and green software, information quality and security, and Web reputation, including semantic categorization and sentiment analysis of social media. - **Data, web, and society**: the research in this area addresses technologies, design methods, and tools for data management systems, information management and querying on the Web, and multimedia and multichannel communication. - **Artificial intelligence and robotics**, devoted to the integration of Machine Learning, Computational Intelligence, Intelligent Data Analysis, Robotics, and Artificial Intelligence techniques for the development of intelligent systems and autonomous agents. - **Advanced software architectures and methodologies**, which is focused on techniques, tools and frameworks for the development of complex software systems, characterized as distributed, pervasive, adaptive, reconfigurable, dynamic and critical. - **System Architectures**, which deals with digital systems architecture and design methodologies for concurrent development of hardware and software components for

	development of hardware and software components for embedded digital systems, including multi-core, reconfigurable and adaptive platforms.
Methods and techniques that will be developed and used to carry out the research	Research focuses both on theoretical models and methods to support design of applications, software, and hardware systems. The strong connection with leading companies makes the mix between theory and application one of the strengths of our PhD.
Educational objectives	We are aimed at developing specific competence, autonomy, research methodology and skills, in an interdisciplinary environment. Laboratory activity is usually required to finalize the research. The student is also encouraged to spend a period of study abroad.
Job opportunities	Career development is possible both in research, in academic and private institutions, and in production, in Italy and abroad. Start-ups from research results are also encouraged. Employment in this area provides plenty of opportunities.
Composition of the research group	26 Full Professors 43 Associated Professors 25 Assistant Professors 209 PhD Students
Name of the research directors	Any faculty member can act as research director

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

Stage and period abroad	
Institution or company where the candidate will spend the period abroad (name and brief description)	
By number of months abroad	0

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student 5.707,20 Euro per student TEACHING ASSISTANTSHIP: availability of funding in recognition of supporting teaching activities by the PhD student There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations. COMPUTER AVAILABILITY: 1st year: Yes 2nd year: Yes 3rd year: Yes DESK AVAILABILITY: 1st year: Yes 2nd year: Yes 3rd year: Yes