

# Politecnico di Milano

## PhD in Information Technology

(Research Area n. 1 - Computer Science and Engineering)

Research Title: (Optimizing Data-Intensive Applications)

<b>Scholarships and Financial support</b>	
Monthly net income of PhD scholarship (max 36 months)	€ 1.200,00 (In case of a change of the welfare rates during the three-year period, the amount could be slightly modified)
Number of scholarships	1
Beginning of PhD	1/5/2015
Deadline for application	10/3/2015
<b>Context of the research activity</b>	
Motivations and objectives of the research in this field	This research is part of the DICE (Developing Data-Intensive Cloud Applications with Iterative Quality Enhancements) research project funded by the EU under the H2020 programme. The goal of the project consists in developing techniques for the development of data-intensive systems, i.e., where data management, and in particular determining which system components elaborate which data and how data is exchanged among them, is of paramount importance. In particular, the goal of this research is the development of optimization techniques for data-intensive applications whose goal is to determine the configuration of minimum cost for the underlying infrastructure providing quality of service guarantees.
Methods and techniques that will be developed and used to carry out the research	The techniques developed and used in this research will be based on linear and non-linear optimization and game theory. The goal is to provide to Software Engineers tools for optimizing and assessing the costs

	of data-intensive systems in early design stages.
Educational objectives	From an educational point of view, the research activity aims at teaching students rigorous methods for the development, performance assessment and optimization of data-intensive systems.
Job opportunities	This research opens the doors to a career in the engineering of complex software systems, in particular data-intensive and Big Data applications, in addition to an academic career.
Composition of the research group	<a href="http://deepse.dei.polimi.it">http://deepse.dei.polimi.it</a> Number of Full Professors: 2 Number of Associated Professors: 3 Number of Assistant Professors: 1 Number of Post-Docs: 3 Number of PhD students: 3 Number of contracted researchers:1
Names of the research directors	Danilo Ardagna
E-mail address, phone number and web-page	<a href="mailto:danilo.ardagna@polimi.it">danilo.ardagna@polimi.it</a> 02 2399 3514 <a href="http://home.deib.polimi.it/ardagna/">home.deib.polimi.it/ardagna/</a>
List of Universities, Companies, Agencies and/or National or International Institutions that are cooperating in the research	1. Imperial College of Science, Medicine and Technology 2. Politecnico di Milano 3. Institute e-Austria Timisoara 4. XLAB razvoj programske opreme in svetovanje d.o.o. 5. Flexiant limited 6. Athens Technology Centre 7. Prodevelop 8. Netfective Technology 9. University of Zaragoza
<b>Additional support</b>	
<u>Housing:</u> financial aid per PhD student per year (gross amount)	
<u>Funding for educational activities</u> (purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences): funding per PhD student per year	2 <sup>nd</sup> year: € 1370 3 <sup>rd</sup> year: € 1370
<u>Teaching assistantship:</u> availability of funding in recognition of support to 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.
<u>Computer availability:</u>	1 <sup>st</sup> year: individual use 2 <sup>nd</sup> year: individual use 3 <sup>rd</sup> year: individual use

<u>Desk availability:</u>	1 <sup>st</sup> year: individual use 2 <sup>nd</sup> year: individual use 3 <sup>rd</sup> year: individual use
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