

# Politecnico di Milano

## PhD in Information Technology

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

**Research Title: (Model-Driven Design of 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 a model-driven methodology that allows assessing quality of service properties (e.g., performance and reliability) of data-intensive applications in early design stages.
Methods and techniques that will be developed and used to carry out the research	The techniques used and developed in this research fall under Model-Driven Engineering approaches. The research will be based on an extension of UML-MARTE

	profiles (extended to cope with data-intensive applications requirements) and will develop high level modeling abstractions that will support Software Engineers in modeling and designing data-intensive systems.
Educational objectives	From an educational point of view, the research activity aims at teaching students rigorous methods for the development of systems that have safety and security concerns.
Job opportunities	This research opens the doors to a career in the engineering of complex software systems, in particular data-intensive applications with performance concerns, 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	<i>Elisabetta Di Nitto, Danilo Ardagna</i>
E-mail address, phone number and web-page	<a href="mailto:elisabetta.dinitto@polimi.it">elisabetta.dinitto@polimi.it</a> 02 2399 3663 <a href="http://dinitto.faculty.polimi.it">http://dinitto.faculty.polimi.it</a>  <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>	There are various forms of financial aid for activities of

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availability of funding in recognition of support to teaching activities by the PhD student	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