

Politecnico di Milano

PhD in Information Technology

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

Research Title: (Formal Verification of data-intensive systems)

Scholarships and Financial support	
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
Context of the research activity	
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 techniques for the automated formal verification of safety and security properties of this kind of applications.
Methods and techniques that will be developed and used to carry out the research	The techniques used and developed in this research fall in the category of "Bounded Model/Satisfiability Checking" techniques. In particular, techniques for the analysis of logic-based models including variables

	whose domains are potentially infinite will be developed.
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 those that have safety- and security-critical concerns, in addition to an academic career.
Composition of the research group	http://deepse.dei.polimi.it 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>Matteo Rossi, Danilo Ardagna</i>
E-mail address, phone number and web-page	matteo.rossi@polimi.it 02 2399 3561 home.deib.polimi.it/rossi/ danilo.ardagna@polimi.it 02 2399 3514 home.deib.polimi.it/ardagna/
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
Additional support	
<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 nd year: € 1370 3 rd year: € 1370
<u>Teaching assistantship:</u> availability of funding in recognition of	There are various forms of financial aid for activities of support to the teaching practice.

support to teaching activities by the PhD student	The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.
<u>Computer availability:</u>	1 st year: individual use 2 nd year: individual use 3 rd year: individual use
<u>Desk availability:</u>	1 st year: individual use 2 nd year: individual use 3 rd year: individual use