Roberta Calegari

Curriculum Vitae

Via Poggio, 30/M
40017 San Giovanni in Persiceto -BO-, Italy
✆ *(0039) 3394626969*
✉ *roberta.calegari@unibo.it*
Born in Bologna (BO), 13/03/1982
Italian Citizenship

Autorizzo il trattamento dei miei dati personali, ai sensi del
D.lgs. 196 del 30 giugno 2003

Education

2014-2017 **PhD Student in Computer Science and Engineering**, *Three years Ph.D. grant won in October 2014. Last year of PhD passed in October 2017 (final examination expected in April 2018). University of Bologna, Italy.* Project Supervisor: Prof. Enrico Denti, Prof. Andrea Omicini.
Thesis title: Micro-Intelligence for the IoT: Logic-Based Models and Technologies

2004–2007 **MSc Computer Engineering (Laurea Magistrale)**, *University of Bologna, Italy.* Grade: **110/110 cum laude.**
Study abroad: Five months (08/2006 - 12/2006) in University College of London, Study and research University program to write the final thesis abroad.
Supervisor: Prof. Enrico Denti, Dr. Cecilia Mascolo.

2006 Winner of a Grant of the School of Engineering for developing the master thesis abroad University of Bologna, Italy.

2001–2004 **BSc Computer Engineering (Laurea Triennale)**, *University of Bologna, Italy.* Grade: **110/110 cum laude.**
Thesis title: Porting and maintenance process of Java applications on .NET platform.
Supervisor: Prof. Enrico Denti.

1996–2001 **High School**, *Liceo Scientifico "N. Copernico", Bologna, Italy.* Grade: **100/100.**

Scientific Activities

Research Themes

My research activity is mainly targeted at analysis distributed situated intelligence & multiparadigm technologies for pervasive socio-technical systems, in particular, from the viewpoint of models, languages and architecture.

My main goal is the engineering of pervasive systems, under the assumption that logic-based multiparadigm languages have the potential to play a prominent role both as *intelligence providers* and *technology integrators* . In fact, the typical LP features – such as programs as logic theories, computation as deduction, and programming with relations and inference – make logic languages a natural choice for building intelligent components .

The research activity carried on by myself and my group of research is focussed on the identification of suitable models and tools for the engineering of pervasive systems, i.e. innovative frameworks

able to spread situated intelligence at different levels.

Main contributions of our work can be summarised as:

○ definition of a logic programming middleware
  - providing uniform, standard, high-level interfaces to the application developers and integrators, so that applications can be easily composed, reused, ported, and interoperate;
  - supplying a set of common services to perform various general purpose functions based on logic programming;
○ definition of an interaction interface exploiting the model of *Logic Programming as a service* (LPaaS) to enable distributed intelligence systems;
○ definition of *Labelled Variables model in Logic Programming* (LVLP) to deal with local and situated needs of each node;
○ implementation of the defined model and architecture on the top of tuProlog system.

A prototype of the LPaaS middleware based on the tuProlog engine is available from tuProlog repository, a full-fledged platform is currently under development and available at `https://bitbucket.org/tuprologteam/tuprolog` for its "core" modules. As a testbed scenarios a Smart House Environment has been developed and is available at `https://bitbucket.org/tuprologteam/homemanager`.

Software Design and Implementation

2014-Present   **tuProlog and Home Manager Software Design and Implementation**, *University of Bologna, Italy.* Project Supervisor: Prof. Enrico Denti. Design and implementation of research software products: tuProlog and Home Manager
http://tuprolog.unibo.it/
http://apice.unibo.it/xwiki/bin/view/Products/HomeManager

School and Seminar Participations

Mar 2015   Bertinoro International Spring School 2015 (Bertinoro, IT)

Mar-Jun 2015   Course on Distributed System, University of Cesena (Cesena, IT)

Jul 2015   GULP School on Logic Programming Principles, University of Genova (Genova, IT)

Publications

Scientific Publications

2007

○ Roberta Calegari, Mirco Musolesi, Franco Raimondi and Cecilia Mascolo. *CTG: a Connectivity Trace Generator for Testing the Performance of Opportunistic Mobile Systems* Proceedings of the European Software Engineering Conference and the International ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE07), Dubrovnik, Croatia, September 2007.

2013

○ Enrico Denti, Andrea Omicini, Roberta Calegari. *tuProlog: Making Prolog Ubiquitous* ALP Newsletter (October 2013, Association for Logic Programming).

2014

○ Enrico Denti, Roberta Calegari, Marco Prandini *Extending a Smart Home Multi-Agent System with Role-Based Access Control* 5th International Conference on Internet Technologies & Society 2014 (ITS 2014), 10-12 December 2014

2015

- Enrico Denti, Roberta Calegari. *Butler-ising HomeManager: a Pervasive Multi-Agent System for Home Intelligence* ICAART 2015
- Roberta Calegari, Enrico Denti, Andrea Omicini *Labelled Variables in Logic Programming: A First Prototype in tuProlog* Proceedings of the Doctoral Consortium of the 15th Symposium of the Italian Association for Artificial Intelligence, 2015

2016
- Roberta Calegari, Enrico Denti *Building Smart Spaces on the Home Manager platform* ALP Newsletter, December 2016
- Roberta Calegari, Enrico Denti, Agostino Dovier, Andrea Omicini *Labelled Variables in Logic Programming: Foundations CILC 2016 - Italian Conference on Computational Logic* Proceedings of the 31st Italian Conference on Computational Logic, CEUR Workshop Proceedings 1645, 20-22 June 2016
- Roberta Calegari, Enrico Denti, Stefano Mariani, Andrea Omicini *Towards Logic Programming as a Service: Experiments in tuProlog* WOA 2016 - 17th Workshop "From Objects to Agents", CEUR Workshop Proceedings 1664, July 2016
- Roberta Calegari, Enrico Denti *The Butlers Framework for Socio-Technical Smart Spaces* Internet Science. 3rd International Conference on Internet Science (INSCI 2016): Openness, Collaboration and Collective Action, Lecture Notes in Computer Science 9934, 12-14 September 2016

2017
- Roberta Calegari, Enrico Denti, Stefano Mariani, Andrea Omicini *Logic Programming as a Service (LPaaS): Intelligence for the IoT* ICNSC 2017, 2017
- Roberta Calegari, Enrico Denti *Context Reasoning and Prediction in Smart Environments: the Home Manager case* Conference Proceedings, KES Smart Innovation Systems and Technologies, 2017

In press Publications
- Roberta Calegari, Enrico Denti, Agostino Dovier, Andrea Omicini *Extending Logic Programming with Labelled Variables: Model and Semantics* Fundamenta Informaticae, 2017

Teaching Activity

Laboratory of Informatics

Tutor of "Fondamenti di Informatica" held by Professor Enrico Denti – during a.y. **2015/2016**, **2014/2015** and **2005/2006** at the Bologna site of the School of Engineering and Architecture. In this course I have been in charge of teaching practice on foundations of computability, imperative programming in Java, and gives a OO Programming in Java language.

2015–2016   **Tutor activity course "Fondamenti di Informatica T-2" prof. Enrico Denti**, *Corso di Laurea Triennale Ingegneria Informatica - University of Bologna, Italy.* Supervision of laboratory and exam sessions.

2014–2015   **Tutor activity course "Fondamenti di Informatica T-2" prof. Enrico Denti**, *Corso di Laurea Triennale Ingegneria Informatica - University of Bologna, Italy.* Supervision of laboratory and exam sessions.

2005–2006 **Tutor activity course "Fondamenti di Informatica L-B" prof. Enrico Denti**, *Corso di Laurea Triennale Ingegneria Informatica - University of Bologna, Italy.* Supervision of laboratory and exam sessions.

Degree Thesis Student Supervision

Co-supervisor of about 30 theses of bachelor and master degrees in Computer Science Engineering. See more details at: http://apice.unibo.it/xwiki/bin/view/RobertaCalegari/CompletedTheses

Further Professional Experience

Professional

2013–2014 **Collaborator of the research project "tuProlog"**, *University of Bologna, Italy.* Project Supervisor: Prof. Enrico Denti. http://tuprolog.unibo.it/ tuProlog is a light-weight Prolog system (interpreter and API), featuring core minimality, dynamic extensibility and configurability, seamless bi-directional integration with Java (and .NET in the .NET version). My contributions regard the re-engineering of the engine architecture and the co-supervision of students that work on tuProlog for their bachelor/master thesis. I even give technical contributions improving functionalities.

2007–2013 **Project Manager in an international Consulting Company**, *Iconsulting.* Bologna. http://www.iconsulting.biz/ Managed a portfolio lifecycle of six customers operating both in Italy and worldwide (e.g. Pirelli, Magneti Marelli,...). Managed over 50 projects in data analysis, what-if simulation, benchmarking against competitors, strategic plans, budgeting and forecasting (over different processes: finance, sales and operations, logistics, HR).

Work Projects

As Project Manager the following projects have been managed:

Pricing Simulation - Product Allocation Simulation, *Pirelli*

Data Analysis by market and customer and by division - Sales Budget, *Esseco*

Sales Budget -P&L Budget and Financial Planning, *Fassa Bortolo*

P&L Budget , *REALCO Group*

As Senior Developer the following projects have been developed:

Demand Planning, *Magneti Marelli*

Sales Analysis, *Fassa Bortolo*

Strategic Plan - Sales Forecasting, *Lowara (gruppo ITT)*

As Application Consultant Developer the following projects have been developed:

Fast Closing - Sales Budget - P&L Budget and Reporting, *Lowara (gruppo ITT)*

Sales Budget, *Marazzi Group*

Sales Analysis - **Sales Budget and Forecast**, *REALCO Group*

Technical skills

Platforms

Desktop	Linux, Mac OS X, Windows.
Mobile	iOS, Android (beginner).

Applications and RDBMS

Advanced	Oracle Hyperion Suite (Essbase, Planning,...), Oracle RDBS and Microsoft SQL Server

Programming languages

Advanced	Java, Python, Gnuplot, SQL, Prolog.
Intermediate	C, C++, Bash Linux.
Basic	C#, HTML, Javscript, Latex, DHTML, CSS, XML (XSLT, DTD, XSD).

Development Tools

Versioning Systems	Subversion, Git.
Testing Frameworks	JUnit, Framework for Integrated Test (FIT), Concordion Suite.
Others	Ant, Eclipse, Visual Studio.

Languages

Italian	**Native**	
English	**Good**	*Good oral and written skills acquired during studies in English speaking environments. I currently use English for my work.*