Curriculum Vitae in English

ANTINISCA DI MARCO, Ph.D.

PERSONAL DATA
Work Address: Dipartimento di Scienze Cliniche Applicate e Biotecnologie, Università degli Studi dell'Aquila, Via Vetoio s.n.c., Località Coppito, L'Aquila - 67100 (Italy)
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Personal Web Page URL: http://www.di.univaq.it/adimarco
ACM SifSoft member since 2002.

CURRENT POSITIONS
March 2008 – today: Assistant professor at University of L'Aquila (Italy).
May 2014 – today: Member of the Board of Directors for SMARTLY s.r.l., a SPIN OFF of the University of L'Aquila
December 2014 – today: Member of the Executive Board of Off Site Art, a cultural association established in L'Aquila that promotes culture initiatives.

HABILITATION
Associate Professor Habilitation, ASN, MIUR, January 2015, Results available at the following URL: https://asn.cineca.it/ministero.php/public/esito/settore/01

EDUCATION
June 2005: Ph.D. in Computer Science, University of L'Aquila, Italy. Title of thesis: Performance Analysis of Software Architectures. - Advisor: Paola Inverardi
July 2001: Master Degree in Computer Science, earned with the maximum score and Summa cum Laude at University of L'Aquila, Italy. Title of thesis: Managing the Consistency of Complex Structured Documents. – Advisors: Paola Inverardi, Anthony Finkelstein (UCL-London, U.K.)

PAST EMPLOYMENTS
September 2006 - March 2007: Post-Doc Fellow at the Computer Science Department, University of L'Aquila (Italy), working on Modeling, design and validation of software architecture for context-aware services on B3G networks that satisfy user QoS requirements.
September 2005 - April 2006: Post-Doc Fellow at Dipartimento di Informatica, Sistemi e Produzione, University of TorVergata (Italy), working on Performance Evaluation of complex software system through models.
March 2005 - September 2006: Contract for Research Collaboration at Dipartimento di Informatica, Sistemi e Produzione,, University of TorVergata (Italy), on Modeling and Performance Evaluation of the Simplicity Architecture.
December 2003: Research Fellow at the Computer Science Department, University of L'Aquila (Italy), working on Dynamic reconfiguration of software systems in order to guarantee a good level of their performance indices.
March 2002 - June 2002: Research Fellow at the Computer Science Department, University of L'Aquila (Italy), working on Early performance validation of Software Architecture.
November 2001 - December 2001: Research Fellow at Dipartimento di Matematica Pura ed Applicata, University of L'Aquila (Italy), working on Quanitative analysis of Software Architecture.

SIGNIFICANT BREAKS
2006 – maternity : in November her first daughter was born.
2009 – earthquake in L'Aquila: she was forced to move from L'Aquila for 9 months, from April to December 2009.
2012 – maternity : in November her second daughter was born.

RESEARCH ACTIVITIES

RESEARCH INTERESTS

I work in the field of Software Engineering, with specific interests on extra functional properties and adaptation. In practice, I am currently researching into the following topics:

Software modeling, Performance Analysis, Performance Antipatterns (Research Activity RA1); Run-time reconfiguration, Bio-inspired paradigms for self-adaptive systems and Context-aware Software Development (Research Activity RA2). Modeling of context and context evolution, Non-Functional Analysis of Context-aware systems, Internet of Things and Wireless Sensor Networks (Research Activity RA3), Bioinformatics and Mobile Health (Research Activity RA4).

Within the Research Activity RA1 Antinisca Di Marco experimented the modelling of software performance using different notations [68,69,63,61] in industrial [65] and research project scenarios [18, 21, 22, 64]. This study allowed to determine the characteristics, advantages and disadvantages of the Software Performance Engineering approaches. The knowledge gained by this experiment allowed her to define an approach to model-based performance analysis of software architecture [72,66,52] that can be easily used by software architects. The defined approach translates the UML software architecture design in queuing networks, reducing the gap between software and performance expertise domains. A software performance analysis approach has been integrated in a framework for analyzing and testing the performance of software services [50].

Antinisca made also a study of the state of the art in the field of model-based software performance analysis [1,8,9,63,58]. The integration of performance analysis and more in general on non-functional analysis into the software lifecycle [60] is a key point in the validation and verification of non-functional requirements. Antinisca Di Marco dealt with this issue integrating Performance and, more in general, Non-Functional Modeling and Validation in Model-Driven Architecture [59,55,54]. In the domain of Wireless Sensor Networks (WSN), Antinisca collaborated to define and implement simulation-based analysis of Energy consumption [18], Performance [21] and Timing [22] of AGILLA mobile Agents modelled using fUML.

To provide instruments for a full integration between software lifecycle and non-functional requirement verification and validation, it has been defined Property Meta-Model (PMM)[35], a meta-model that allows the specification of (application-independent) non-functional metrics and properties. The properties that can be modelled could be: prescriptive (i.e., requirements to satisfy) or descriptive (i.e. non-functional characteristics of a software system or part of it), qualitative (such as security) and quantitative (such as, performance and reliability). We integrate PMM with a complex event meta-model [27] for two reasons: first to allow the definition of properties of specific systems, and second to open towards properties monitoring at run-time. To this last aim, we defined on PMM a model-driven infrastructure for runtime monitoring [34] and more in general a Property-Driven Software Engineering Approach [31]. In such a way, using PMM it is possible to specify non-functional properties and to generate, using model-to-code transformations, probes able to monitor the defined properties and alert the developers in case some properties are not satisfied during system execution. PMM and the proposed monitoring infrastructure have also been used to specify dependability properties in dynamic, evolving and heterogeneous systems [40,46] and to define an approach able to detect performance antipatterns at run-time [19].

With the introduction of model-driven techniques in the software lifecycle, the analysis of performance (as well as other quality attributes) has gained efficacy by automated transformations

from software artifacts to performance models, whereas there is a clear lack of automation the Performance Analysis Results Interpretation and Feedback Generation step that brings the analysis results back to the software model. The problem of interpreting the results of performance analysis is indeed quite complex, as it consists in the detection of performance flaws in software artifacts basing on numerical indices. In fact, mean values, variances, probability distributions are hard to be interpreted and translated into feedback for software engineers that expect detection and solution of performance problems, preferably in the form of design suggestions (e.g. split an overloaded software component in two components and re-deploy one of them). Antinisca Di Marco contributed to this research field defining an approach to the automation the Performance Analysis Results Interpretation and Feedback Generation based on performance antipatterns. The usage of performance antipatterns facilitates the automation as they have been proven in practice to be a very promising support to the identification and solution of performance problems [41]. A performance antipattern documents a common mistake (i.e. a bad practice") made during software development as well as its solution: what to avoid and how to solve a performance problem at the level of software design. As first contribution, Antinisca collaborated in the formal specification of antipatterns using first order logics [4,32,44]. Then a model-driven approach has been sketched that generates architectural feedback by remove software performance flaws documented as performance antipatterns [49]. The outlined approach is then actualized to catch performance antipatterns in ADL specifications. [2, 28]. The defined first-order logic conditions have been modelled using PMM. This modeling enabled the detection of antipattern at run-time using the PMM-based modelling infrastructure[19]. Finally Antinisca Di Marco collaborated to the joint usage of Bottleneck Analysis and Performance Antipatterns [20] aiming to determine the limits and the breakthrough of the antipattern-based approach compared to the well-known bottleneck analysis. The provided study highlighted synergies between the two techniques that mitigates the limits of both approaches and bring to a stronger Performance Analysis Results Interpretation and Feedback Generation methodology.

Within the Research Activity RA2, Antinisca Di Marco works in the domain of adaptive systems since 2004 when collaborated to the implementation of a model based approach for the definition of reconfigurations driven by run-time data that improves system performance [67]. This approach has been improved and applied to Siena publish/subscribe middleware [6,62] to define a model-based system reconfiguration for dynamic performance management that is based on online learning of run-time models for system performance and resource management [9].

In the domain of Software Services, she collaborated to specify a conceptual model for adaptable context-aware services [57] and the relative development process[53]. Moreover she worked on the specification of a model-based dynamic QoS-driven service composition [43].

More recently, Antinisca collaborated to define a novel approach to adaptation that is inspired by cell lifecycle [42,47]. The proposed Self-adaptive Paradigm mimics the cell and its resilient features to adapt to new situations. The stem cell is the key role since it is able to produce differentiated cells that has the ability to deal with the new situations. Stem cells in the metaphor are software modules with the intelligence needed to interpret new situations and that is able to synthesize new software modules able to face with the new context, possible re-assembly code already implemented. Other key concepts is the apoptosis and mitosis that can be seen as recovery mechanisms in case of fault. From this work, we also defined a new language (namely, PROTEUS) to specify adaptation plans [29]. We used PROTEUS to specify adaptation and reconfiguration strategies in heterogeneous WSN [25,11,17].

Today's networked environment is characterized by a wide variety of heterogeneous systems that dynamically decide to interoperate to achieve some goal. In this context, systems meet and know each other at runtime when they want to start to interoperate. Given the huge heterogeneity and dynamism characterizing the described environment, automated solutions appear to be the only way to achieve interoperability timely and with the needed level of flexibility. Several approaches in literature propose the automated synthesis of connectors (or mediators) to reconcile protocols diversities and to allow systems interoperability. In [10,24], Antinisca collaborated to define a novel

automated synthesis of connectors: (a) that takes into account performance concerns during the synthesis process and (b) whose synthesized connectors are (self-)adaptive with respect to runtime performance requirements changes. By reasoning on systems' specification, the approach first produces a mediator that satisfies the functional requirements. Then it acts on the produced mediator to let it satisfy performance issues and to make it (self-)adaptive.

Context-awareness is becoming a first class attribute of software systems. In fact, applications for mobile devices need to be aware of their context in order to adapt their structure and behavior and offer the best quality of service even in case the (software and hardware) resources are limited. Although performance, reliability and energy consumption are key non-functional properties for such applications, existing approaches for modeling and analysis fail to capture the characteristics related to the context, thus resulting not suited for this domain. **Within the Research Activity RA3**, Antinisca Di Marco collaborated to introduce a framework [39,36,45,56] for modeling and analyzing the performance of context-aware mobile software systems. The framework allows to model: the software architecture, the context management, the adaptable behaviors and the performance parameters. Such models can then be transformed into performance models for analysis purposes. We tailor an integrated environment for modeling these elements in UML [39], and we show how to use it for performance analysis purposes. The proposed framework has been extended to other non-functional aspects [48].

In [45], a modelling technique has been introduced to model in an easy way the context and its evolution. This modelling is used at the design time to enable non-functional analysis of context-aware mobile applications. Context is an application-specific set of heterogeneous data that a context-aware system should be capable to sense to accordingly adapt its behavior. Context evolution may affect the qualities of the functionalities provided by context-aware systems, in terms of variations of its non-functional properties. In [26], Antinisca collaborated to propose a distributed tool that is capable to monitor, retrieve and arrange heterogeneous data from any IP-enabled device in a set of state-based awareness manager models. The latter are meant to model the context evolution and to be integrated in model-driven approaches to evaluate the impact of the evolution of context on the quality of the provisioned services.

Wireless Sensor Networks (WSN) are nowadays applied to a wide set of domains (e.g., security, health [30]). WSN are networks of spatially distributed, radio-communicating, battery-powered, autonomous sensor nodes. WSN are characterized by scarcity of resources, hence an application running on them should carefully manage its resources. WSN are tools enabling the context sensing and that should be context-aware as well to react to context changes (e.g., the resources they can use). Moreover, the WSN application should be carefully designed to guarantee the stringent non-functional requirements they have to satisfy. To address all these issues Antinsca collaborated to design and implement the AGILLA MODELING FRAMEWORK (AMF) to support the WSN application design and the WSN Manager that, using PROTEUS, adapts the WSN to context changes. AMF [18,22,21,23] is a UML-base modelling environment that allows to design AGILLA agents introducing task and process templates and a suitable UML profile for AGILLA and the devised modelling approach. AMF generates AGILLA code directly from the UML models. The AMF is also enriched by timing, performance and energy consumption analyses to validate that the provided design satisfies the imposed requirements. To make AGILLA battery-aware, Agilla Instruction Set has been extended with the new battery instruction able to retrieve the battery Voltage of a WSN node at run-time [18]. All the provided analysis are based on simulation of fUML design. To make AGILLA MW adaptable, we implement the WSN Manager that integrates the AGILLA agent injector with a new module, the PROTEUS Interpreter that is able to interpret the reconfiguration plan and to execute it with the help of the injector. We demonstrate the validity of our implementation on VISION project scenarios [11,17,38].

Within the Research Activity RA4, Antinisca works towards three directions:
To implement a Bioinformatics approach to predict target genes for dysregulated microRNAs in hepatocellular carcinoma [3]. In particular, thanks to the DIANA award, she is implementing a novel

on-line system that using information available on other on-line systems (e.g., rna22), returns a list of potential genes relating to a group of significantly altered miRNAs in cancer diseases for different species. One of the principal objective of the project is to identify functional clusters of target genes that could be related to the provided set of microRNAs. The system must built up networks to visualize the possible circuits and pathways in which selected miRNAs could be involved, providing a potential resource for other researches focused on cancer disease.

To implement novel mobile health systems to help in the monitoring of toxicity and symptoms in cancer patients under disease-oriented therapy [15]; such system should be able to also evaluate the compliance of the patients to the specific therapy.

To analysis, design, implementation, and validate methods and tools for engineering "human-friendly Knowledge-INtensive Dynamic systems" (*FRIENDLY & KIND systems*, F&Ks) [12]. FRIENDLY & KIND systems are dynamic systems that, using different sources of information (coming from sensors, devices, and knowledge sources), will help the patients, and their care givers, in their daily care activities. F&Ks will be characterized as "Knowledge-INtensive" systems, providing flexible access to dynamic, heterogeneous, and distributed sources of knowledge in a highly dynamic computational environment consisting of computational entities, devices, sensors, and services available in the Internet and in the cloud.

RESEARCH COLLABORATIONS
Carleton University, Dorina Petriu, Canada, http://www.sce.carleton.ca/faculty/petriu.html.
This collaboration focus on the definition of synergies between performance antipatterns and bottleneck analysis. At the moment, it conduced to one publication: Catia Trubiani, Antinisca Di Marco, Vittorio Cortellessa, Nariman Mani, Dorina Petriu. Exploring Synergies between Bottleneck Analysis and Performance Antipatterns. ACM International Conference on Performance (ICPE), 2014, Dublin, Ireland.

School of Science and Technology, Franco Raimondi, Middlesex University, London, U.K.
http://www.rmnd.net/
This collaboration focuses in defining a language for reconfiguration plan and its application in Wireless Sensor Networks. At the moment it conducted to two publications:
  1) Antinisca Di Marco, Francesco Gallo, Orhan Gemikonakli, Leonardo Mostarda, Franco Raimondi. Implementing Adaptation and Reconfiguration Strategies in Heterogeneous WSN. The 27th IEEE International Conference on Advanced Information Networking and Applications (AINA-2013), pp. 477-483, Barcelona, Spain, March 25-28, 2013.
  2) Antinisca Di Marco, Francesco Gallo, Franco Raimondi. PROTEUS: a language for Adaptation Plans. The Fourth International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE 2012), July 22-27, 2012, Nice, France.

ISTI-CNR Pisa, Antonia Bertolino, Istituto di Scienza e Tecnologie dell'Informazione A.
Faedo, CNR, Pisa http://www.isti.cnr.it/
This collaboration focused on the definition of metrics and on the definition of a Properties Meta-model that allows the specifications of application-independent non-functional metrics, specific quality and quantitative properties based on metrics models and of specific application event to observe. Moreover, leveraging such Property Meta-model, a configurable monitoring infrastructure has been devised. The configuration of the monitoring infrastructure is generated from the Property models conform to the define Property Meta-Model. This collaboration produced several publications:
1) Antonia Bertolino, Antinisca Di Marco, Francesca Lonetti. Complex events specification for properties validation . Accepted for the Main Track of 8th International Conference on the Quality of Information and Communications Technology (Quatic2012) Lisbon, Portugal, 3 to 6 September 2012.
2) Antinisca Di Marco, Francesca Lonetti, Guglielmo De Angelis. Property-Driven Software Engineering Approach. Poster Paper. Fifth International Conference on Software Testing, Verification and Validation (ICST2012), pp. 966-967,April 2012, Montreal.

3) Antonia Bertolino, Calabrò Antonello, Lonetti Francesca, Antinisca Di Marco and Antonino Sabetta, Towards a model-driven infrastructure for runtime monitoring, in: Proceedings of SERENE 2011, 2011.

4) Antinisca Di Marco, Claudio Pompilio, Antonia Bertolino, Calabrò Antonello, Lonetti Francesca and Antonino Sabetta, Yet Another Meta-Model to specify Non-Functional Properties, 2011.

5) Antonia Bertolino, Felicita Di Giandomenico, Antinisca Di Marco, Valerie Issarny, Fabio Martinelli, Ilaria Matteucci, Paolo Manuel Masci, Rachid Saadi and Antonino Sabetta, Dependability in dynamic, evolving and heterogeneous systems: the CONNECT approach , in: 2nd International Workshop on Software Engineering for Resilient Systems (SERENE 2010), 2010.

6) Antonia Bertolino, Felicita Di Giandomenico, Antinisca Di Marco, Paolo Manuel Masci and Antonino Sabetta, QoS metrics in dynamic, evolving and heterogeneous CONNECTed systems, in: eighth Internationa Workshop On Dynamic Analysis (WODA 2010), 2010.

CNR-IASI Roma, Guglielmo De Angelis, Roma.
This collaboration is focused on performance analysis and testing and conducted to the following publications:
1) Antinisca Di Marco, Francesca Lonetti, Guglielmo De Angelis. Property-Driven Software Engineering Approach. Poster Paper. Fifth International Conference on Software Testing, Verification and Validation (ICST2012), pp. 966-967,April 2012, Montreal.
2) Antonia Bertolino, Guglielmo De Angelis, Antinisca Di Marco, Paola Inverardi, Antonino Sabetta and Massimo Tivoli, A Framework for Analyzing and Testing the Performance of Software Services, in: ISoLA, pages 206-220, 2008.

DEWS Center of Excellence, Luigi Pomante, Università degli Studi di L'Aquila, http://dews.univaq.it/index.php?id=dewshome
This collaboration focuses on the analysis of non-functional attributes of WSN-based application and on the definition of tools and mechanisms for their adaptation. It produced the following publications:
1) Luca Berardinelli, Antinisca Di Marco, Stefano Pace, Luigi Pomante, Walter Tiberti: Energy Consumption Analysis and Design of Energy-Aware WSN Agents in fUML. ECMFA 2015: 1-17
2) Luca Berardinelli, Antinisca Di Marco, Stefano Pace, Stefano Marchesani, Luigi Pomante. Modeling and Timing Simulation of Agilla Agents for WSN Applications in Executable UML. EPEW 2013, pg. 300-311.
3) Antinisca Di Marco, Stefano Pace, Stefano Marchesani, Luigi Pomante. Model-Driven Agent Generation Approach for Adaptable and Resource-Aware Sensor Node. Third International Workshop on Software Engineering for Sensor Network Applications (SESENA2012). Zurich, Switzerland.
4) Dajana Cassioli, Vittorio Cortellessa, Antinisca Di Marco and Luigi Pomante, A Successful VISION: Video-oriented UWB based Intelligent Ubiquitous Sensing, in: IEEE Consumer Communications and Networking Conference, Las Vegas, Nevada, USA, IEEE Communications Society, 2011.

Prof. Edoardo Alesse e Alessandra Tessitore – Dipartimento DISCAB, University of L'Aquila.
This collaboration focuses on the bioinformatics approaches that jointly analyse a set of MicroRNAs (miRNAs) in presence of HCC. MicroRNAs are a class of small, non-coding RNAs that generated a great impact in the molecular biology field. The aim is to predict the joint involvement of a set of MicroRNAs in the HCC cancer, to understand the biological mechanisms and to identify a rewarding strategy that contrasts the HCC cancer growth. This collaboration produced two research projects (DIANA and ARES, described in the following) and the journal paper:

1) Filippo Del Vecchio, Francesco Gallo, Antinisca Di Marco, Valentina Mastroiaco, Pasquale Caianiello, Francesca Zazzeroni, Edoardo Alesse and Alessandra Tessitore. Bioinformatics approach to predict target genes for dysregulated microRNAs in hepatocellular carcinoma: study on a chemically-induced HCC mouse model BMC Bioinformatics Journal, 16(1): 1-11 (2015)

Federica Aielli, Temporary Researcher and Oncologist at DISCAB Department, University of L'Aquila. This collaboration focuses on the definition and implementation of a technology-aided framework to enable a reliable implementation of cancer targeted therapy at home, addressing the evaluation of the patient compliance and collecting data to enable studies for therapy refinements and reduction of symptoms and side effects. This collaboration brought to the iCARE project (detailed in the following) and two publications:

1) Federica Aielli, Davide Ancona, Pasquale Caianiello, Stefania Costantini, Giovanni De Gasperis, Antinisca Di Marco, Angelo Ferrando and Viviana Mascardi FRIENDLY & KIND with your Health: Human-friendly Knowledge-INtensive Dynamic Systems for the e-Health Domain. 14th International Conference on Practical Applications of Agents and Multi-Agent Systems. Sevilla (Spain), June, 2016
2) Dajana Cassioli, Antinisca Di Marco, Stefano Pace, Federica Aielli. i-CARE: Mobile health-care system to monitor toxicity and symptoms in cancer patients under disease-oriented therapy. CINI Annual Workshop on ICT for Smart Cities & Communities, October 2015, Palermo, Italy.

PROJECT EVALUATOR
External Expert for the European Commission.
June 2016: Project Evaluator for the Call for proposals 2015- Research Projects - Università di Sassari, funds of Fondazione Banco di Sardegna.

RESEARCH CENTERS, LABORATORIES AND GROUPS
July 2015-today: Director of the University of L'Aquila Node of the InfoLife CINI Laboratory. The laboratory deals with Bioinformatics and System Biology research topics. The local node is composed by Researchers in the field of Medicine, Statistics, Mathematics and Computer Science.
TMS-Thursday Morning Science: TMS is an initiative born in the University of L'Aquila with the aim of developing scientific thinking and of always being up to speed with the latest news in science. This group deals with technical issues in everyday lab life, statistics, bioinformatics and common problems, where more experienced people can share their knowledge with students, PhD students and in general with anybody interested. In TMS, Antinisca Di Marco is part of the TMS Committee and Chair of the BISMA working group (BISMA means Bio- Informatics, Statistics and Mathematics) - http://tmsunivaq.wixsite.com/discab.
2013-2014: Antinisca Di Marco was an External Collaborator of SENSO Lab, Middlesex University, London, U.K.

PATENTS AND SPIN-OFF
SMARTLY NATIVES OF SMARTY LIVING s.r.l. : it is a Spin-Off of the University of L'Aquila, born on May 2014, for which Antinisca Di Marco is one of the founding and majority partner.

RESEARCH FELLOWSHIP
March 2005 - September 2005 Computer Science Department, University College London - London, U.K. - working on the performance analysis of ubiquitous software systems
May 2012 West Virginia University - College of Engineering and Mineral Resources - Lane Department of Computer Science

COORDINATION OF RESEARCH PROJECTS
iCARE (ERC-POC) (June 2016- November 2017)- iCARE ERC Proof Of Concept Grant, Proposal number 693680. (2016-2017)- iCARE aims at creating a technology-aided framework to enable a reliable implementation of cancer targeted therapy at home, addressing underlying challenges, and to make available the monitoring data to enable studies for therapy refinements and reduction of symptoms and side effects. iCARE will propose new organizational models to strengthen the cooperation and interaction between health professionals, social carers, informal caregivers and patients to support new patient pathways emerging from the increased application of cancer targeted

therapies at home. In iCare Antinisca Di Marco has the role of Scientific coordinator and she is responsible for the development of the software systems and mobile apps iCARE provides.

DIANA (May 2016-April2017) Data science analysis to determine the Influence of multiple conjoint mirnAs on caNcer diseAse: the DIANA project. - Azure Microsoft Research Award - In this project, we want to move forward in order to obtain a list of potential genes relating to a group of significantly altered miRNAs in cancer diseases for different species. One of the principal objective of the project is to identify functional clusters of target genes that could be related to the provided set of microRNAs. The system must built up networks to visualize the possible circuits and pathways in which selected miRNAs could be involved, providing a potential resource for other researches focused on cancer disease. The expected outcomes are: i) a new graph DB, based on
NEO4J technology collecting all the results of the project that are the information related to MiRNAs, their target genes, and all the functional relations and annotations we identify in our experiments; ii) new functional prediction techniques to determine putative target genes influenced by a set of conjoint MicroRNA; iii) a user-friendly and agile graphical interface easy to use for biotechnologies and biologists that helps them to query the DB in order to find new miRNAs-targets (multi-hop) relations and hence miRNA-pathways relations ; iv) possibly, identify new and unobserved miRNAs-targets (multi-hop) relations that can guide towards new directions in in-vivo experiments; v) provide DIANA API to push towards cloud paradigm for future services built on top
of DIANA. The DIANA project is developed by the Bioinformatics Group of the University of L'Aquila and Antinisca Di Marco is the Principal Investigator of the project.

FP7-Ideas-ERC starting Grant (2010-2015): Video-oriented UWB-based Intelligent Ubiquitous Sensing (grant number 240555)- VISION Project is a multi-beneficiary ERC grant awarding Dajana Cassioli. It aims to developing an innovative infrastructure providing real-time sensing services, with particular emphasis on 3D video, with mobile and context-aware operation: 60 GHz UWB radios to enable broadband transmissions in the Wireless Sensor Network; a comprehensive channel model to optimize the radio design; novel techniques to manage the huge number of nodes for ubiquitous sensing; innovative tools to support the development process of intelligent services; full cross-layer adaptability to external conditions to assure the best achievable performance and support of Quality of Services. In VISION, Antinisca Di Marco was the Scientific Coordinator for University of L'Aquila (UDA) Beneficiary. She coordinated the Software Quality Group in the development of novel approach for adaptable and resource-aware WSN. The proposed approach was inspired by the cell lifecycle and combines AGILLA Modeling Framework with PROTEUS Language. Moreover, she collaborated to develop a modelling approach to context and its evolution in order to enhance the performance and reliability analysis to context-aware and mobile applications. Finally, she collaborated to the formalization of performance antipatterns to enable automatic detection and solution of performance flaws at the software architectural level. The detection and solution of performance antipatterns permit to improve the performance of the software architecture.

ARES (mirnAs' inuence on canceR dESease) (2015)- ISCRA Class C Projects (code: HP10CV8XPV). MicroRNAs (miRNAs) are a class of small, non-coding RNAs that generated a great impact in the molecular biology field. After their discovery, miRNAs received an enormous attention because of their ability to regulate almost every aspect of cellular functionality (such as, differentiation). Given their involvement in various pathologies including cancers, miRNAs functions started to be investigated with the help of bioinformatics approaches that allows to predict interaction with potential target genes [mirbase.org, microrna.org, genemania.org]. In this project, we want to move forward in order to obtain a list of potential genes relating to a group of significantly altered miRNAs in HCC for different species. We want to start to predict target genes for a selected miRNAs. One of the final objective of the project is to identify functional of clusters target genes could be related to. Antinisca Di Marco was the Principal Investigator of the project.

PARTICIPATION TO RESEARCH PROJECTS
The research project I have been involved in are:

FP7-FET CONNECT: Emergent Connectors for Eternal Software Intensive Networked Systems – Antinisca Di Marco was a member of R&D Team of the University of L'Aquila
FP6-STREP PLASTIC: Providing Lightweight and Adaptable Service Technology for pervasive Information and Communication - Antinisca Di Marco was a member of R&D Team of the University of L'Aquila.
MIUR PRIN (Italian project) - **D-ASAP**: Architetture Software Adattabili e Affidabili per Sistemi Pervasivi - Antinisca Di Marco was a member of R&D Team of the University of L'Aquila
RIDITT RICOSTRUIRE (Italian project) 2012-2015 - Trasferimento tecnologico e creazione di nuove imprese nell'ambito delle tecnologie ICT avanzate applicate allo sviluppo economico e territoriale post sisma.
FP7 - STREP SIMPLICITY - Secure, Internet-able, Mobile Platforms LeadIng Citizens Towards simplicitY - Antinisca Di Marco was a Collaborator of Università of TorVergata.
MIUR PRIN (Italian project) - SAHARA - Software Architectures for Heterogeneous Access Infrastructures - Antinisca Di Marco was a member of R&D Team of the University of L'Aquila.
MIUR FIRB (Italian project)- Performance Evaluation of Complex Systems: Techniques, Methodologies and Tools - Antinisca Di Marco was a Collaborator of Università of TorVergata

PARTICIPATION TO Ph.D. BOARD
Informatica e Applicationi Ph.D. Course at University of L'Aquila - 2010
Ingegneria e Scienze dell'Informazione Ph.D. Course at University of L'Aquila - 2012-Today

Ph.D. STUDENT SUPERVISING AND TUTORING EXPERIENCE
4 Ph.D. students since 2009 at University of L'Aquila:

Francesco Gallo (started his program in 2009 at University of L'Aquila) focuses his Ph.D. program on the study of adaptable systems. In particular, his goal was to specify and develop a framework that allows the specification and execution of reconfiguration plans. The framework is called Proteus and it follows the STEM paradigm we devised for adaptive systems, as inspired by STEM cells and in general by biological cell lifecycle. The Proteus framework actually implements part of the paradigm and is composed by: (i) a language (PROTEUS Language) that defines concepts to specify reconfiguration plans, and (ii) an engine that interprets the plan and executes it on the real applications. Such an engine is distributed and each Proteus resource is equipped with this engine. To develop the framework we used several programming languages (Java, Python, C), but the final release is in GROOVY language that allowed us to implement all features and capabilities of PROTEUS. For Francesco, I was the Principal Advisor.

Stefano Pace (started his program in 2010 at University of L'Aquila) is developing a framework for the modeling, analysis and code generation of AGILLA-based Wireless Sensor Networks application. At the moment the devised framework permits to model the application by using UML language and specific devised UML profiles, to simulate the application behavior, and to perform timing analysis and performance analysis of multiple agents sharing a common WSN node. For Stefano, I was the Principal Advisor.

Mai Abu-Seir started on December 2014. She is working on context-aware programming. In particular, her research project is to devise a new model-driven methodology that is able to transform a context-unaware system into a context-aware system. The approach assumes that an external study elicits the relevant context variability that lets more advantageous contextual variables emerge. The result of this external study is properly modelled with suitable notation and the final aim is to define a set of transformation that generate new code implementing the context-aware version of the original system that is able to sense the context changing and to adapt itself to such changes. For Mai I'm the co-Tutor together with Paola Inverardi that is her main Advisor.

-**Walter Tiberti** started on November 2016.
The research project of Walter Tiberti is part of Middleware (MW) to mobile agents for Wireless Sensor Networks (WSN). The aim is to define, design, implement and validate a MW that conforms

to main standard protocol communication for WSN (LR-WPAN 802.15.4) and possibly other emerging standards in the field (for example LORA). This MW will present characteristics that allow to place it well beyond the current state of the art (Eg. Agilla) such as, for example, the ability to manage network topologies complex (eg. hierarchical, heterogeneous, multi-hop, etc.) with limited consumption of energy and, above all, the ability to support data transmissions Point-to-Point and Cluster-wise secure through the use of innovative schemes hybrid encryption that will be specially developed / extended to fit to the intrinsic characteristics of the WSN and be integrated with ease MW in itself.

For Walter, I'm the co-Tutor together with Luigi Pomante that is his main Advisor.

EVALUATION COMMISSION FOR DOCTORAL DEFENSE
Members of the Evaluation Committee for the Doctoral Defense of Mr. Nikola Rendevski appointed by the University of L'Aquila- **Defense of Mr. Nikola Rendeski**, Faculty of Electrical Engineering and Information Technologies, Ss. Cyril and Methodius University, SKOPJE, Rep. of MACEDONIA (November 11th 2014)

ORGANIZATION OF INTERNATIONAL CONFERENCES/WORKSHOPS
INFOLIFE Workshop 21-23 Settembre 2017, Università Ca' Foscari Venezia. Program Co-Chair and Organizing Committee Member.
EPEW2017: 14th European Performance Engineering Workshop, September 2017, Berlin, Germany- Program Co-Chair
ICPE 2017: 8th International Conference on Performance Engineering, April 2017, L'Aquila, Italy - Local Chair
SCORE-it 2015: Italian Student Contest on Software Engineering @ 37th International Conference on Software Engineering (ICSE2015), May 2015, Florence, Italy – Program Co-Chair
PESOS 2012: Special session on the quest for case studies within the 4th International Workshop on Principles of Engineering Service-Oriented Systems – Program Co-Chair
ASE2008: 23rd IEEE/ACM International Conference on Automated Software Engineering 2008, September 2008, L'Aquila, Italy - Local Organization Member.
ARAMIS 2008: The 1st International Workshop on Automated engineeRing of Autonomous and run-tiMe evolvIng Systems, September 2008, L'Aquila, Italy- Program Co-Chair.

MAIN PROGRAM COMMITTEES
Antinisca was a member of the Program Committee of the following conferences/workshops:
ICPE 2017: 8th ACM/SPEC International Conference on Performance Engineering
AMARETTO2017: International Workshop on domAin specific Model-based AppRoach to vErificaTion and validation
PerCom2017 IEEE International Conference on Pervasive computing and communications
FESCA 2014 - 2017 International Workshop on Formal Engineering approaches to Software Components and Architectures
womENcourage 2016 - 3rd ACM-W Europe Celebration of Women in Computing
QOSA 2009-2015: International Conference on the Quality of Software Architectures (2009-2015). Wireless Sensor Networks Symposium - International Wireless Communications and Mobile Computing Conference (2013-2014)
EEEW 2014 - 2015:International Workshop on Engineering Energy Efficient WSNs
PESOS2013-2015 International Workshop on Principles of Engineering Service-Oriented Systems
EPEW 2012: European Performance Engineering Workshop
WRUMMM 2012 and 2014: Workshop on Research and Use of Multi-formalism Modeling Methods
ICSEA 2012: The Seventh International Conference on Software Engineering Advances
ISABEL 2011: 4th International Symposium on Applied Sciences in Biomedical and Communication Technologies;
EWDC 2011: 13th European Workshop on Dependable Computing
SEAA2008 – 2010: Special Session on "Quality and Service-Oriented Applications" of Euromicro Conference on Software Engineering and Advanced Applications.
ICGD&BC: International Conference on Global Defence and Business Continuity – several editions.

ICDT: International Conference on Digital Telecommunications – several editions.
I**NTENSIVE**: International Conference on Intensive Applications and Services – several editions.

REVIEWER FOR INTERNATIONAL JOURNALS
Antinisca Di Marco is the reviewer of the following prestigious international journals:

IEEE Transactions on Software Engineering.
International Journal on Software and Systems Modeling
IEEE Internet Computing.
Elsevier Journal of Systems and Software.
International Journal of Computing and Information Sciences.
ACM Computer Survey.
ACM Transactions on Autonomous and Adaptive Systems.
Springer Journal of Software and Systems Modeling.
International Journal of Information Technology & Decision Making
Springer Journal of Empirical Software Engineering

SCIENTIFIC BOOK REVIEWER
Antinisca has been a member of the Review Committee for the following book volumes:

Self-Aware Computing Systems. Herausgeber: Kounev, S., Kephart, J.O., Milenkoski, A., Zhu, X. (Eds.) 2017 - Springer International Publishing, doi: 10.1007/978-3-319-47474-8

Modeling and Simulating Software Architectures - The Palladio Approach. Ralf H. Reussner, Steffen Becker, Jens Happe, Robert Heinrich, Anne Koziolek, Heiko Koziolek, Max Kramer, and Klaus Krogmann. MIT Press, Cambridge, MA, October 2016.

AWARDS
Antinisca Di Marco received the following awards:
Best Paper Award: Performance modeling and analysis of context-aware mobile software systems. Luca Berardinelli, Vittorio Cortellessa, Antinisca Di Marco. Fundamental Approaches to Software Engineering. Paphos, Cyprus, 22 - 26 March, 2010.
Best Poster Award: Learning from the Cell Life-Cycle: A Self-adaptive Paradigm, Antinisca Di Marco, Francesco Gallo, Paola Inverardi and Rodolfo Ippoliti, in: ECSA, pages 485-488, 2010
Fast Breaking Paper: in March 2006 Thomson-Scientific Essential Science Indicators indicate the journal paper: Model-Based Performance Prediction in Software Development: A Survey (2004), Simonetta Balsamo, Antinisca Di Marco, Paola Inverardi and Marta Simeoni, in: IEEE Trans. Software Eng., 30:5(295-310) as one of the most cited in the field of Computer Science.

GRANTS
Antinisca Di Marco obtained the following grants for her research and innovation activities:
Azure Microsoft Research Award May 2016 for the DIANA project ($20000 for Azure use).
PERFCycle: EUR 12000 grant from the University of L'Aquila for the PERFCycle project.
Top Business idea: EUR 10000 grant for CARE-me that was chosen as one of the top business ideas presented from the project "RICOSTRUIRE Trasferimento Tecnologico e creazione di nuove imprese nell'ambito delle tecnologie ICT avanzate applicate allo sviluppo economico e territoriale post sisma " (Ministero dello Sviluppo Economico-Programma RIDITT Rete Italiana per La Diffusione dell'Innovazione e il Trasferimento Tecnologico alle imprese). Care-me is the core-business of SMARTLY s.r.l. spin-off
Quick Impact Project: EUR 12000 grant by the Comitato Abruzzo, through the initiative Quick impact Project. On the list of projects funded in the first call, CAREme occupies the fourth place on 18. The grant was a finantial support for the establishment of SMARTLY s.r.l.
CARISPAQ: EUR 5000 grant from Fondazione Cassa di Risparmio della Provincia dell'Aquila for the realization of the project "CARE-me: non ti sCordARE di ME" whose aim is the

realization of a prototype of a smart baby seat-care January, 2015.
SEGRAVIS: Grant for 6 months training mobility at University College London, London, U.K.. This grant was funded by the Network of Excellence.

INVITED PRESENTATIONS AND KEYNOTE
Antinisca Di Marco was invited to give a keynote at the following conferences/workshops and research centers:
QUDOS2017: DevOps and WSN App: a Bio-Inspired Paradigm, L'Aquila, Italy, April 2017
CRUI: "Il Cloud nella Bioinformatica (Bioinformatics approach to predict target genes for dysregulated microRNAs in hepatocellular carcinoma)"- Webinar, February 2017, CRUI, ROME, Italy.
TMS Seminar: Bioinformatics and the importance of data design. L'Aquila,Italy, October 2016
Bioinformatics Day @ DAIS2016: "A bioinformatics approach to predict the Influence of multiple conjoint mirnAs on cancer diseAse: the DIANA project", Bioinformatics Day @ DAIS, Venice, Italy, 7 July 2016.
AMARETTO 2016: "The Role of Context in Extra-functional Verification and Validation", International Workshop on domAin specific Model-based AppRoaches to vErificaTion and validaTiOn, Rome, Italy, February 2016.
Middlesex University - Talk: A Short Introduction of the SEALAB Quality Group's Research. July 2011, Middlesex University, London, U.K.
UCL-talk: "A Software Performance Engineering Approach", April 2005, Computer Science Department, University College London, London, U.K.

INVITED PAPERS
SESENA2012: Antinisca Di Marco, Stefano Pace, Stefano Marchesani, Luigi Pomante: Model-driven agent generation approach for adaptable and resource-aware sensor node. SESENA 2012: 64-65

TUTORIALS AT INTERNATIONAL CONFERENCES
QUEST/ICSE2004: Cortellessa V., Di Marco A., Inverardi P., Software model to performance model transformations, QEST 2004 Tutorial Lecture, Enschede, The Netherlands, September 2004. The tutorial has been also presented, in a revised and updated version, to the 27th International Conference on Software Engineering, May 15 - 21, 2005 - St. Louis (Missouri, USA).

WOSP2008: Berardinelli L., Cortellessa V., Di Marco A., Transformations from software models to quality models: mechanisms, approaches, technologies, tools, Tutorial Lecture, The Seventh International Workshop on Software and Performance (WOSP 2008) Princeton, NJ, USA, June 23-26, 2008.

LIST OF PUBLICATIONS

Book-Monograph
 [1] Model-Based Software Performance Analysis. Vittorio Cortellessa, Antinisca Di Marco Paola Inverardi. First Edition, Springer, May 2011.

Journals

 [2] Martina De Sanctis, Catia Trubiani, Vittorio Cortellessa, Antinisca Di Marco, Mirko Flamminj. A Model-driven Approach to Catch Performance Antipatterns in ADL Specifications. Information & Software Technology, ELSEVIER Journal. 83: 35-54 (2017)

[3] Filippo Del Vecchio, Francesco Gallo, Antinisca Di Marco, Valentina Mastroiaco, Pasquale Caianiello, Francesca Zazzeroni, Edoardo Alesse and Alessandra Tessitore. Bioinformatics approach to predict target genes for dysregulated microRNAs in hepatocellular carcinoma: study on a chemically-induced HCC mouse model BMC Bioinformatics Journal, 16(1): 1-11 (2015)

[4] Vittorio Cortellessa, Antinisca Di Marco, Catia Trubiani. An approach for modeling and detecting software performance antipatterns based on first-order logics.Journal of Software and System Modeling 13(1): 391-432 (2014). Springer

[5] Patricia Lago, Grace A. Lewis, Andreas Metzger, Vladimir Tosic, Domenico Bianculli, Antinisca Di Marco, Andrea Polini, Pierluigi Plebani: Report of the 4th international workshop on principles of engineering service-oriented systems (PESOS 2012): internet of services and the quest for case studies. ACM SIGSOFT Software Engineering Notes 38(1): 35-38 (2013)

[6] Mauro Caporuscio, Antinisca Di Marco and Paola Inverardi, Model-based system reconfiguration for dynamic performance management, (2007), in: Journal of Systems and Software, 80:4(455-473)

[7] Giuseppe Della Penna, Antinisca Di Marco, Benedetto Intrigila, Igor Melatti and Alfonso Pierantonio, Interoperability mapping from XML schemas to ER diagrams (2006), in: Data Knowl. Eng., 59:1(166-188)

[8] Simonetta Balsamo, Antinisca Di Marco, Paola Inverardi and Marta Simeoni, Model-Based Performance Prediction in Software Development: A Survey (2004), in: IEEE Trans. Software Eng., 30:5(295-310)

Conferences, Book Chapters, Workshops

[9] Jürgen Walter, Antinisca Di Marco, Simon Spinner, Paola Inverardi and Samuel Kounev Online Learning of Run-Time Models for Performance and Resource Management in Data Centers Book Chapter - Self-Aware Computing Systems, Springer, Lecture Notes In Computer Science - LNCS, volume (In Press), 2017

[10] Radu Calinescu, Marco Autili, Camara Javier, Antinisca Di Marco, Simos Gerasimo, Paola Inverardi, Alexander Perucci, Nils Jansen, Joost-Pieter Katoen, Marta Kwiatkowska, Ole J. Mengshoel, Romina Spalazzese and Massimo Tivoli, Synthesis and Verification of Self-aware Systems Book Chapter - Self-Aware Computing Systems, pages 1-35, Springer, Lecture Notes In Computer Science - LNCS, volume (In Press), 2016

[11] Dajana Cassioli, Antinisca Di Marco, Francesco Gallo, Stefano Pace, Luigi Pomante and Claudia Rinaldi VISION: Video-oriented UWB-based Intelligent Ubiquitous Sensing. International Conference on the Science of Electrical Engineering (ICSEE) Eilat, , Israel. November 2016

[12] Federica Aielli, Davide Ancona, Pasquale Caianiello, Stefania Costantini, Giovanni De Gasperis, Antinisca Di Marco, Angelo Ferrando and Viviana Mascardi FRIENDLY & KIND with your Health: Human-friendly Knowledge-INtensive Dynamic Systems for the e-Health Domain. 14th International Conference on Practical Applications of Agents and Multi-Agent Systems. Sevilla (Spain), June, 2016

[13] Henry Muccini, Antinisca Di Marco, Alessandro D'Innocenzo and Giovanni De Gasperis. Living Lab UnivAq - Teaching of Smart Environments. CINI Annual Workshop on ICT for Smart Cities & Communities, September 2016, Benevento, Italy.

[14] Federica Aielli, Davide Ancona, Pasquale Caianiello, Stefania Costantini, Giovanni De Gasperis, Antinisca Di Marco, Angelo Ferrando and Viviana Mascardi. FRIENDLY & KIND with your Health: Human-friendly Knowledge-INtensive Dynamic Systems for e-Health. CINI Annual Workshop on ICT for Smart Cities & Communities, September 2016, Benevento, Italy.

[15] Dajana Cassioli, Antinisca Di Marco, Stefano Pace, Federica Aielli. i-CARE: Mobile health-care system to monitor toxicity and symptoms in cancer patients under disease-oriented therapy. CINI Annual Workshop on ICT for Smart Cities & Communities, October 2015, Palermo, Italy.

[16]   Stefano Pace, Antinisca Di Marco, Dajana Cassioli, Veronica Santi, Claudia Pajewski. iTour: An interpreter for thematic virtual tours. CINI Annual Workshop on ICT for Smart Cities & Communities, October 2015, Palermo, Italy.

[17]   Dajana Cassioli, Antinisca Di Marco, Francesco Gallo, Stefano Pace, Luigi Pomante, and Claudia Rinaldi VISION:Video-oriented UWB-based Intelligent Ubiquitous Sensing Demo of the Video-oriented Intelligent Sensing Demo @ SENSoRNETS 2015, Anger, France.

[18]   Luca Berardinelli, Antinisca Di Marco, Stefano Pace, Luigi Pomante, Walter Tiberti. Energy Consumption Analysis and Design of Energy-Aware WSN Agents in fUML. ECMFA 2015: 1-17

[19]   Antinisca Di Marco, Catia Trubiani. A model-driven approach to broaden the detection of software performance antipatterns at runtime. FESCA 2014, Grenoble, France.

[20]   Catia Trubiani, Antinisca Di Marco, Vittorio Cortellessa, Nariman Mani, Dorina Petriu. Exploring Synergies between Bottleneck Analysis and Performance Antipatterns. ACM International Conference on PErformance (ICPE), 2014, Dublin, Ireland.

[21]   Luca Berardinelli, Antinisca Di Marco, Stefano Pace: fUML-Driven Design and Performance Analysis of Software Agents for Wireless Sensor Network. ECSA 2014: 324-339

[22]   Luca Berardinelli, Antinisca Di Marco, Stefano Pace, Stefano Marchesani, Luigi Pomante. Modeling and Timing Simulation of Agilla Agents for WSN Applications in Executable UML. EPEW 2013, pg. 300-311

[23]   Antinisca Di Marco, Stefano Pace Model-Driven Approach to Agilla Agent Generation. IEEE Proc. of IWCMC 2013 Cagliari, Sardinia, Italy, July 1—5, 2013.

[24]   Antinisca Di Marco, Paola Inverardi, Romina Spalazzese. Synthesizing self-adaptive connectors meeting functional and performance concerns. SEAMS 2013, 133-142.

[25]   Antinisca Di Marco, Francesco Gallo, Orhan Gemikonakli, Leonardo Mostarda, Franco Raimondi. Implementing Adaptation and Reconfiguration Strategies in Heterogeneous WSN. The 27th IEEE International Conference on Advanced Information Networking and Applications (AINA-2013), pp. 477-483, Barcelona, Spain, March 25-28, 2013.

[26]   Luca Berardinelli, Antinisca Di Marco, Flavia Di Paolo. MICE: Monitoring and modellng the Context Evolution. 2nd Awareness Workshop on Challenges for Achieving Self-awareness in Autonomic Systems (Awareness 2012). 10th September 2012, Lyon, France.

[27]   Antonia Bertolino, Antinisca Di Marco, Francesca Lonetti. Complex events specification for properties validation . Accepted for the Main Track of 8th International Conference on the Quality of Information and Communications Technology (Quatic 2012) Lisbon, Portugal, 3 to 6 September 2012

[28]   Vittorio Cortellessa, Martina De Sanctis, Antinisca Di Marco, Catia Trubiani. Enabling Performance Antipatterns to arise from an ADL-based Software Architecture . Joint 10th Working IEEE/IFIP Conference on Software Architecture & 6th European Conference on Software Architecture (WICSA/ECSA 2012). Helsinki, Finland, August 20–24, 2012.

[29]   Antinisca Di Marco, Francesco Gallo, Franco Raimondi. PROTEUS: a language for Adaptation Plans. The Fourth International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE 2012), July 22-27, 2012, Nice, France.

[30]   Luca Berardinelli, Dajana Cassioli, Antinisca Di Marco, Anna Esposito, Maria Teresa Riviello, Catia Trubiani. VISION as a support to Cognitive Behavioural Systems. Book Chapter. Cognitive Behavioural Systems, LNCS .

[31]   Antinisca Di Marco, Francesca Lonetti, Guglielmo De Angelis. Property-Driven Software Engineering Approach. Poster Paper. Fifth International Conference on Software Testing, Verification and Validation (ICST2012), pp. 966-967,April 2012, Montreal.

[32]   Vittorio Cortellessa, Antinisca Di Marco, Catia Trubiani. Software Performance Antipatterns: Modeling and Analysis. 12th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Model-Driven Engineering. LNCS 7320. Bertinoro, Italy. June 2012.

[33]   Antinisca Di Marco, Stefano Pace, Stefano Marchesani, Luigi Pomante. Model-Driven Agent Generation Approach for Adaptable and Resource-Aware Sensor Node. Third

International Workshop on Software Engineering for Sensor Network Applications (SESENA2012). Zurich, Switzerland.

[34]   Antonia Bertolino, Calabro' Antonello, Lonetti Francesca, Antinisca Di Marco and Antonino Sabetta, Towards a model-driven infrastructure for runtime monitoring, in: Proceedings of SERENE 2011, 2011.

[35]   Antinisca Di Marco, Claudio Pompilio, Antonia Bertolino, Calabro' Antonello, Lonetti Francesca and Antonino Sabetta, Yet Another Meta-Model to specify Non-Functional Properties, 2011

[36]   Luca Berardinelli, Antinisca Di Marco and Cecilia Mascolo, Performance Analysis and Prediction of Physically Mobile Systems: a Case Study, in: InfQ 2011, 2011.

[37]   Fabio Calvarese, Antinisca Di Marco and Ivano Malavolta, Towards a graphical representation for the Æmilia Architecture Description Language, in: InfQ2011, Lipari, Italy, 2011 .

[38]   Dajana Cassioli, Vittorio Cortellessa, Antinisca Di Marco and Luigi Pomante, A Successful VISION: Video-oriented UWB based Intelligent Ubiquitous Sensing, in: IEEE Consumer Communications and Networking Conference, Las Vegas, Nevada, USA, IEEE Communications Society, 2011

[39]   Luca Berardinelli, Vittorio Cortellessa and Antinisca Di Marco, A Profile-driven Environment for Modeling and Analyzing Context-Aware Software Services, in: 36th EUROMICRO Conference on Software Engineering and Advanced Applications (SEAA 2010), 2010

[40]   Antonia Bertolino, Felicita Di Giandomenico, Antinisca Di Marco, Valérie Issarny, Fabio Martinelli, Ilaria Matteucci, Paolo Manuel Masci, Rachid Saadi and Antonino Sabetta, Dependability in dynamic, evolving and heterogeneous systems: the CONNECT approach , in: 2nd International Workshop on Software Engineering for Resilient Systems (SERENE 2010), 2010

[41]   Vittorio Cortellessa, Antinisca Di Marco, Romina Eramo, Alfonso Pierantonio and Catia Trubiani, Digging into UML models to remove performance antipatterns, in: First International workshop on Quantitative Stochastic Models in the Verification and Design of Software Systems (Quovadis), 2010

[42]   Antinisca Di Marco, Francesco Gallo, Paola Inverardi and Rodolfo Ippoliti, Learning from the Cell Life-Cycle: A Self-adaptive Paradigm, in: ECSA, pages 485-488, 2010 - Best Poster Award

[43]   Antinisca Di Marco and Antonino Sabetta, Model-based dynamic QoS-driven service composition, in: 2nd International Workshop on the Quality of Service-Oriented Software Systems (QUASOSS 2010), 2010

[44]   Vittorio Cortellessa, Antinisca Di Marco and Catia Trubiani, Performance Antipatterns as Logical Predicates, in: 15th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS2010), 2010

[45]   Luca Berardinelli, Vittorio Cortellessa and Antinisca Di Marco, Performance Modeling and Analysis of Context-Aware Mobile Software Systems, in: FASE, pages 353-367, 2010 - Best Paper Award

[46]   Antonia Bertolino, Felicita Di Giandomenico, Antinisca Di Marco, Paolo Manuel Masci and Antonino Sabetta, QoS metrics in dynamic, evolving and heterogeneous CONNECTed systems, in: eighth International Workshop On Dynamic Analysis (WODA 2010), 2010

[47]   Antinisca Di Marco, Francesco Gallo, Paola Inverardi and Rodolfo Ippoliti, Towards a Stem Architecture Description Language for Self-Adaptive Systems, in: Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO2010), 2010

[48]   Vittorio Cortellessa, Antinisca Di Marco and Luca Berardinelli, A Unified Approach to Model Non-Functional Properties of Mobile Context-Aware Software, in: Non-functional System Properties in Domain Specific Modeling Languages, Denver (Colorado), USA, CEUR-WS, 2009

[49]   Vittorio Cortellessa, Antinisca Di Marco, Romina Eramo, Alfonso Pierantonio and Catia Trubiani, Approaching the Model-Driven Generation of Feedback to Remove Software Performance Flaws, in: EUROMICRO-SEAA, pages 162-169, 2009

[50]   Antonia Bertolino, Guglielmo De Angelis, Antinisca Di Marco, Paola Inverardi, Antonino Sabetta and Massimo Tivoli, A Framework for Analyzing and Testing the Performance of Software Services, in: ISoLA, pages 206-220, 2008

[51]   Mauro Caporuscio, Antinisca Di Marco, Leonardo Mariani, Henry Muccini, Andrea Polini and Onn Shehory, ARAMIS 2008: The First Int. Workshop on Automated engineeRing of Autonomic and run-tiMe evolvIng Systems, in: ASE, pages 529-530, 2008

[52]   Vittorio Cortellessa, Sara Di Gregorio and Antinisca Di Marco, Using ATL for transformations in software performance engineering: a step ahead of java-based transformations?, in: WOSP, pages 127-132, 2008

[53]   Marco Autili, Luca Berardinelli, Vittorio Cortellessa, Antinisca Di Marco, Davide Di Ruscio, Paola Inverardi and Massimo Tivoli, A Development Process for Self-Adapting Service Oriented Applications, in: International Conference on Service Oriented Computing (ICSOC 2007), pages 442-448, Springer, 2007

[54]   Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, Integrating Performance and Reliability Analysis in a Non-Functional MDA Framework, in: FASE, pages 57-71, 2007

[55]   Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, Non-Functional Modeling and Validation in Model-Driven Architecture, in: WICSA, pages 25, 2007

[56]   Antinisca Di Marco and Cecilia Mascolo, Performance analysis and prediction of physically mobile systems, in: WOSP, pages 129-132, 2007

[57]   Marco Autili, Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, A Conceptual Model for Adaptable Context-aware Services, in: Proceedings of the International Workshop on Web Services Modeling and Testing (WS-MaTe2006), pages 15--33, 2006

[58]   Antinisca Di Marco and Raffaela Mirandola, Model Transformation in Software Performance Engineering, in: QoSA, pages 95-110, 2006

[59]   Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, Software performance model-driven architecture, in: SAC, pages 1218-1223, 2006

[60]   Vittorio Cortellessa, Antinisca Di Marco, Paola Inverardi, Fabio Mancinelli and Patrizio Pelliccione, A Framework for the Integration of Functional and Non-functional Analysis of Software Architectures (2005), in: Electr. Notes Theor. Comput. Sci., 116(31-44)

[61]   Connie U. Smith, Catalina M. Lladó, Vittorio Cortellessa, Antinisca Di Marco and Lloyd G. Williams, From UML models to software performance results: an SPE process based on XML interchange formats, in: WOSP, pages 87-98, 2005

[62]   Mauro Caporuscio, Antinisca Di Marco and Paola Inverardi, Run-time performance management of the Siena publish/subscribe middleware, in: WOSP, pages 65-74, 2005

[63]   Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, Transformations of software models into performance models, in: ICSE, pages 728-729, 2005

[64]   Antinisca Di Marco and Francesco Lo Presti, Two Early Performance Analysis Approaches at work on Simplicity System, in: First International Conference on the Quality of Software Architectures (QoSA 2005), 2005

[65]   Daniele Compare, Antonio D'Onofrio, Antinisca Di Marco and Paola Inverardi, Automated Performance Validation of Software Design: An Industrial Experience, in: ASE, pages 298-301, 2004

[66]   Antinisca Di Marco and Paola Inverardi, Compositional Generation of Software Architecture Performance QN Models, in: WICSA, pages 37-46, 2004

[67]   Marco Castaldi, Antinisca Di Marco and Paola Inverardi, Data driven reconfiguration for performance improvements: a model based approach, in: RAMSS 2004, 2004

[68]   Simonetta Balsamo, Moreno Marzolla, Antinisca Di Marco and Paola Inverardi, Experimenting different software architectures performance techniques: a case study, in: WOSP, pages 115-119, 2004

[69]   Vittorio Cortellessa, Antinisca Di Marco and Paola Inverardi, Three Performance Models at Work: A Software Designer, Perspective (2004), in: Electr. Notes Theor. Comput. Sci., 97(219-239)

[70]   Vittorio Cortellessa and Antinisca Di Marco, Towards uniform interchange formats for performance validation tools, in: DSN 2004 - Fast Abstract, 2004

[71]   Vittorio Cortellessa, Antinisca Di Marco, Paola Inverardi, Henry Muccini and Patrizio Pelliccione, Using UML for SA-based Modeling and Analysis, in: Proceedings of the Int. Workshop on Software Architecture Description and UML., Lisbon, Portugal, 2004

[72]   Antinisca Di Marco and Paola Inverardi, Starting from Message Sequence Chart for Software Architecture Early Performance Analysis, in: SCESM 2003, 2003

[73]   Giuseppe Della Penna, Antinisca Di Marco, Benedetto Intrigila, Igor Melatti and Alfonso Pierantonio, Xere: Towards a Natural Interoperability between XML and ER Diagrams, in: FASE, pages 356-371, 2003

TEACHING ACTIVITIES

SUPERVISING AND TUTORING EXPERIENCE AT UNIVERSITY OF L'AQUILA
Bachelor theses supervised:
-23 theses in Computer Science since 2004 at University of L'Aquila. Two BSC
theses produced the following research papers: i) Flavia Di Paolo et al. MICE: Monitoring and Modeling the Context Evolution. SASO Workshops 2012: 139-144. ii) Claudio Pompilio et al. Yet another meta-model to specify non-functional properties. QASBA 2011: 9-16
-1 Thesis in Biotechnology (degree in April, 22 2017) that deals with simulation of pathways using COPASI.

Master theses supervised: 5 theses in Computer Science and 1 thesis in Mathematics on Bioinformatics topics at University of L'Aquila.

UNDERGRADUATE AND MASTER COURSES AT UNIVERSITY OF L'AQUILA

Facoltà di Biotecnologia – Università degli Studi dell'Aquila
a.a. 2005/06 - Laboratorio di informatica E STATISTICA (INF/01) - 3CFU - 24 hours

Facoltà di Scienze MM.FF.NN. – Università degli Studi dell'Aquila
a.a. 2007-2008: Fondamenti di Programm.ne con Lab. - modulo di Fondamenti di programmazione (INF/01) - 6CFU – 60 hours –Bachelor Course
a.a. 2008/09, 2009/10, 2010/11, 2011/12 - insegnamento di: Ingegneria del software con laboratorio - modulo di ingegneria del software (INF/01) - 6 CFU- 60 hours – Bachelor Course
a.a. 2012/13 - Modulo di Ingegneria del Software (INF/01) - 6 CFU - 60 hours - Bachelor
        - Bioinformatica (INF/01) - 6 CFU - 60 hours – Bachelor and Master Course

Dipartimento di Ingegneria e Scienze dell'Informazione, e Matematica (DISIM) – Università degli Studi dell'Aquila
a.a. 2013/14 - Ingegneria del Software (INF/01) - 9 CFU – 90 hours – Bachelor Course
        - Bioinformatica (INF/01) - 6 CFU – 60 hours – Bachelor and Master Course
a.a. 2014/15 - Ingegneria del Software (INF/01) - 9 CFU – 90 hours – Bachelor Course
        - Bioinformatica (INF/01) - 6 CFU – 60 hours – Bachelor and Master Course
a.a. 2015/16 - Bioinformatica (INF/01) - 6 CFU – 60 hours – Bachelor and Master Course
a.a. 2016/17: BIO INFORMATICS 6 CFU - 48 hours – in English – Bachelor and Master Course

Dipartimento di Scienze Cliniche Applicate e Biotecnologiche (DISCAB) – Università degli Studi dell'Aquila
Bioinformatica (1 CFU) (2016-2017) - Master di I livello "Diagnostica molecolare delle malattie genetiche, tumorali ed infettive".
Bioinformatica (1 CFU) (2015-2016) - Master di I livello "Diagnostica molecolare delle malattie genetiche, tumorali ed infettive".
Mobile Health (2 CFU) (2014-2015) - Master di II livello "Cure di supporto e palliative in oncologia".
Bioinformatica (1 CFU) (2014-2015) - Master di I livello "Diagnostica molecolare delle malattie genetiche, tumorali ed infettive".

Dipartimento di Scienze Cliniche Applicate e Biotecnologiche (DISCAB) – Università degli Studi dell'Aquila
Basi Informatiche (2 CFU) (2015-2016) - Scuola di Specializzazione in Chirurgia Generale
Corso mutuato con:
  Basi Informatiche (2 CFU) (2015-2016) - Scuola di Specializzazione in Chirurgia Vascolare.
  Basi Informatiche (1 CFU) (2015-2016) - Scuola di Specializzazione in Oncologia.
Basi Informatiche (2 CFU) (2015-2016) - Scuola di Specializzazione in Radiodiagnostica.
Corso mutuato con:
  Basi Informatiche (2 CFU) (2015-2016) - Scuola di Specializzazione in Neurologia.
  Basi Informatiche (2 CFU) (2015-2016) - Scuola di Specializzazione in Radioterapia.

Basi Informatiche (2 CFU) (2016-2017) - Scuola di Specializzazione in Chirurgia Generale
Corso mutuato con:
  Basi Informatiche (2 CFU) (2016-2017) - Scuola di Specializzazione in Chirurgia Vascolare.
  Basi Informatiche (1 CFU) (2016-2017) - Scuola di Specializzazione in Oncologia.
Basi Informatiche (2 CFU) (2016-2017) - Scuola di Specializzazione in Radiodiagnostica.
Corso mutuato con:
  Basi Informatiche (2 CFU) (2016-2017) - Scuola di Specializzazione in Neurologia.
  Basi Informatiche (2 CFU) (2016-2017) - Scuola di Specializzazione in Radioterapia.

Università degli Studi dell'Aquila
Tirocinio Formativo Attivo 2014-2015 - classe 042. DIDATTICA DEI PROGETTI E DEL SOFTWARE COMPLESSO (SSD INF/01),
Percorsi Abilitanti Speciali a.a.2013/2014 - Progettazione e sviluppo di applicazioni di rete.

LABORATORY

Living Lab Università dell'Aquila – Antinisca Di Marco is one of the creator of the laboratory and currently she is one of the members of its executive board. The Living Lab is a distributed laboratory in the premises of DISIM, Department of Engineering and Computer Science and Mathematics, University of L'Aquila, seeking to create Internet of Thing (IoT), Smart City and Cyber-Physical applications. It is distributed since its equipment (sensors, cameras, actuators, presence detectors, controllers, totems, drones, RFID reader, demonstrators, etc.) are displaced in the Departmental spaces (classrooms, laboratories, indoor and outdoor areas). And it is 'living' since it consists of various easily re-locatable and reconfigurable components, which can be partially or totally moved and reconfigured for different objectives. The laboratory has been described in the publication [13].

TEACHING ACTIVITIES OUTSIDE THE UNIVERSITY
Contract as teacher at BITMEDIA S.r.L. (Rome - ITALY) in the courses: "Java Language, Java RMI and Distributed Environments". (March 2002 - June 2002), Unified Modeling Language", (June 2004).

Contract as teacher for Consorzio Quorum (Rome - ITALY) in the courses: "Unified Modeling Language" (June 2004), "Web application" (April 2004 - May 2004), IFTS course (December 2003 - January 2004), "Analyst and Programmer of C/C++"(September 2004, September 2002 - October 2002).

Contract as teacher for Regione Abruzzo and Consorzio Multimedia in the courses: "Internet Project Manager" (December 2001 - May 2002).

CULTURAL ACTIVITIES AND THIRD MISSION

<u>MEMBER OF SELECTING COMMITTEE</u>
(February 2016 - April 2016) Member of the Selecting Committee for the public competition for a position of Bioinformtics - I.Z.S."G. Caporale", Teramo.
(October 2013) Member of the Selection Committee for the Competition of the Admission to the Engineering and Information Science PhD Course, XXIX cycle.

<u>EVENTS</u>
(9 February 2016) DONNA E SCIENZA: PASSATO, PRESENTE E FUTURO. Da Anna Santucci alle scienziate dellAquila di oggi. "Prospettive Roses" day, a project of the municipality of L'Aquila.
(30 September 2016) Street Science Univaq, Researchers Night organized by University of L'Aquila.
(21 October 2016) TecHeroes loves Gamedev Tour, University of L'Aquila.
(26 October 2016) Computer Science Career Day, University of L'Aquila.

Il sottoscritto esprime il proprio consenso al trattamento dei dati personali, nel rispetto del D.Lgs. 196/2003, per gli adempimenti connessi alla presente procedura.

L'Aquila, 29.03.2017 _____