

CURRICULUM VITAE ET STUDIORUM

Danilo Ardagna



Politecnico di Milano,
Dipartimento di Elettronica, Informazione e Bioingegneria
Via Golgi 42, 201333 Milano, Italy
Telephone: +39-02 2399 3514
e-mail: danilo.ardagna@polimi.it
Born: June 8, 1973—Monza (MB), Italy
Nationality: Italian

highlights

120+ peer-reviewed publications, including **45 journal papers** (26 in Scimago Q1 ranking), and **14 IEEE/ACM Transactions**

Co-author of **75 scientific publications on peer-reviewed conferences/workshops**

Co-author of **6 chapters in scientific books**

Co-author of **two textbooks** in Italian

Co-editor of **one scientific book**

Co-inventor of **two international patents (one already granted)**

15 Invited Talks/Seminars/Panels (2007-2021)

3 tutorials

2 best paper awards

Visiting researcher and intern at IBM T.J. Watson Research, BCAM (Basque Center for Applied Mathematics), and Federal University of Minas Gerais, Brazil

Co-applicant for several **European and national funded projects**, totaling **3.15mln euros** of funding to date

IBM 2016 SUR grant, big data P8 cluster donation. Joint work with Prof. Cristina Silvano and Prof. Letizia Tanca

IBM 2010 faculty award for research on virtualized systems

Top CompSci University Azure Adoption research July 2018, July 2017, October 2016

Amazon AWS in Education research grant **May 2014, March 2012, and December 2010.**

Joint work with Prof. Elisabetta Di Nitto and Prof. Gianpaolo Cugola

Windows Azure Research Pass October 2013. Joint work with Prof. Elisabetta Di Nitto

Politecnico di Milano **Fondi 5 per mille 2013 Poli-RISPOSTA project co-applicant**

Politecnico di Milano **Fondi 5 per mille 2009 GAME-IT Principal Investigator**

Based on **Google Scholar** (27/6/2020), my **h-index** is **34** and total number of **citations** is **5900 (2409 since 2016)**, with first published paper in 2002. My **top ranked paper** was published in 2007 collecting up to **1174 citations (Scopus h-index 26, citations 3315, 3048 without self-citations)**

appointment

Dec 2014 -
2006-2014

POLITECNICO DI MILANO, MILAN, ITALY

Associate Professor at the Department of Electronics, Information, and Bioengineering

Assistant Professor (tenure-track) at the Department of Electronics, Information, and Bioengineering

2004-2006

Post Doctorate at the Department of Electronics, Information, and Bioengineering. Grant by MIUR to support post-doctoral studies

2001-2004

Ph.D. Student. Grant by Politecnico di Milano to support Ph.D. studies

full Professor qualification

July 2018 Italian national scientific qualification in 09/H1 ING-INF/05 scientific sector (from 26/7/2018 to 26/7/2024)

education

2001-2004 Politecnico di Milano, Ph.D. in Computer Science and Engineering with the thesis “A cost-oriented methodology for the design of information technology architectures,” advisor Prof. C. Francalanci

1992-2000 Politecnico di Milano, Master in Computer Science and Engineering (100/100 magna cum laude), with the thesis “ISIDE: A software tool for the cost-oriented design of Information Systems,” advisor Prof. G. Bracchi

AREAS OF SPECIALIZATION

Design, prototype, and evaluation of self-management algorithms for Service based, Cloud and Big Data systems. Optimization algorithms and game theory applications to resource management of very large-scale data centers. Performance modelling, design and runtime management of Big Data applications. Machine learning models for Data Intensive and Deep Learning applications performance prediction. Model Driven Design and management of multi-Cloud applications. Energy efficiency solutions for virtualized infrastructures. Cost-oriented design and capacity planning of distributed IT architectures.

awards

BEST PAPER

- *D. Ardagna*, S. Bernardi, E. Gianniti, S. Karimian Aliabadi, D. Perez-Palacin, J. I. Requeno. Modeling Performance of Hadoop Applications: A Journey from Queueing Networks to Stochastic Well Formed Nets. ICA3PP 2016 Proceedings. Granada, Spain.
- Evangelinou, M. Ciavotta, G. Kousiouris, *D. Ardagna*. A Joint Benchmark-Analytic Approach For Design-Time Assessment of Multi-Cloud Applications. In CF2015 Proceedings. Pisa, Italy.

MICROSOFT CLOUD SERVICES

- Top CompSci University Azure Adoption. October 2016 (20k\$), July 2017 (20k\$), July 2018 (15k\$)
- Windows Azure Research Pass October 2013. Joint work with Prof. Elisabetta Di Nitto, DEEP-SE Cloud initiative (40k\$)

AMAZON WEB SERVICES

- AWS in Education research grant March 2014. Joint work with Prof. Elisabetta Di Nitto, DEEP-SE Cloud initiative (5k\$)
- AWS in Education research grant March 2012. Joint work with Prof. Elisabetta Di Nitto and Prof. Gianpaolo Cugola, DEEP-SE Cloud initiative (10k\$)
- AWS in Education research grant December 2010. Joint work with Prof. Elisabetta Di Nitto, DEEP-SE Cloud initiative (10k\$)

IBM

- IBM SUR Grant October 2016. Joint work with Prof. Cristina Silvano and Prof. Letizia Tanca. P8 based cluster for Big Data research (80k\$)
- IBM Faculty Award 2010. The PARVIS project has been funded by IBM to develop self-managing techniques for virtualized systems (20k\$)

POLITECNICO DI MILANO

- Fondi 5 per mille 2013. Poli-RISPOSTA **project co-applicant** (Principal Investigator Prof. F. Ballio). Poli-RISPOSTA is one of the 8 projects selected out of 50 proposals by Politecnico di Milano to foster research on society. The project will develop an emergency management system for hydro-geological disasters (65k€)
- Fondi 5 per mille 2009. GAME-IT project **Principal Investigator**. GAME-IT is one of the 8 projects selected out of 77 proposals by Politecnico di Milano to support junior researchers. The project aims at the development of green policies for virtualized data centers (60k€)

research interests

BIG DATA AND ARTIFICIAL INTELLIGENCE APPLICATIONS, EDGE COMPUTING

- Optimal partitioning of AI models in cloud and edge/fog systems and runtime management across computing continua
- Network architecture search of Deep Learning models with accuracy and performance guarantees
- Advanced scheduling policies for deep learning applications training in GPU based clusters
- Performance modelling of GPGPU systems through machine learning
- Runtime management of Big Data and computing intensive applications: optimization models for the development of efficient runtime management policies
- Big Data applications performance modelling: machine learning and hybrid machine learning techniques for gray box performance modelling, simulation models based on Stochastic Well Formed Petri Nets for MapReduce and Spark
- Model-driven-development of Data-Intensive Applications: methodology and tools for data-aware quality-driven development and optimization of Big Data applications

GREEN AND CLOUD COMPUTING

- Model-driven-development of Cloud Applications: MDE approach for design and runtime management of applications targeting multiple Clouds with Quality of Service guarantees
- Service Provisioning: Definition of capacity allocation and load redirect policies with response time and availability constraints in Infrastructure as a Service Systems through optimization and game theory
- Energy Aware Resource Allocation: Development of autonomic resource allocation techniques for the resource management of very large-scale virtualized Data Centers

SERVICE ORIENTED ARCHITECTURES

- Model-driven-development of SOAs: Model driven development of component-based systems in SOA and pervasive environments
- Web Service Composition: Definition and analysis of service selection policies in composed Flexible Processes with Quality of Service global constraints

AUTONOMIC COMPUTING

- Self-Management Techniques: Design of network controllers for Autonomic Computing Infrastructures. Implementation of resource allocation policies for the optimization of Service Provider profits associated with multiple class of Service Level Agreement acting at multiple time scales

DESIGN OF IT ARCHITECTURES

- Cost comparison of IT architectures: Empirical analysis of the technical and management costs of different IT architectures. Implementation of a design tool to support minimum-cost IT architectural design (including joint hardware and network communication costs)

international scientific collaboration

VISITING RESEARCHER

- 2016 One week visit at IBM T.J. Watson Research Centre. Participating to research projects on performance analysis and management of Spark applications with Machine Learning and Hybrid Machine Learning techniques, within the Infrastructures Performance Analysis and System Optimization Group
- 2013 Two week visit at IBM T.J. Watson Research Centre. Participating to research projects on management of Map-reduce Cloud data centers and analysis of clock drifts and synchronization algorithms for multi-Cloud systems, within the Infrastructures Performance Analysis and System Optimization Group
- 2011 One month visit at BCAM (Basque Center for Applied Mathematics) working within the Analysis, Design and Performance Evaluation of Telecommunication Networks and Computer Systems group on the study of Generalized Nash Equilibria for Platform-as-a-Service Cloud Systems
- 2007 Two week visit at IBM T.J. Watson Research Centre. Participating in a research project on the self-optimization of Autonomic Computing within the Infrastructures Performance Analysis and System Optimization Group
- 2005 One week visit at Computer Science Department at the Federal University of Minas Gerais, Brazil. Participating in a research project on the management of services and Service Level Agreements in the Service Oriented Architecture, within the Performance Analysis and Modelling group led by Prof. Virgilio Almeida

INTERNSHIP AT IBM T.J. WATSON RESEARCH CENTER

- 2003 Six month internship at IBM T. J. Watson Research Center, Performance Analysis and System Optimization Group. Participated in a research project on maximization of Service Level Agreement revenues in Web Systems. Grant by IBM Research to support studies

participation in research projects

EUROPEAN RESEARCH PROJECT

- 2021- **Coordinator of** the AI-SPRINT H2020 project for the development of a design and runtime framework to support the design and operation of AI applications in computing continua with performance, security and privacy guarantees.
- 2021- Participate to LIGATE EURO-HPC research project at Politecnico di Milano. Develop performance models and Bayesian optimization methods for drug discovery application optimization in HPC clusters.
- 2020-2021 **Coordinator for Politecnico di Milano research unit** for the TETRAMAX ANDREAS project involved in the design of GPU scheduling policies for deep learning applications
- 2017-2019 **Coordinator for Politecnico di Milano research unit** for the ATMOSPHERE H2020 project involved in the performance modelling and prediction of container based and GPU based applications
- 2016-2018 Participated to DOSSIER-Cloud Twinning project, providing expertise on Cloud services, resource and energy management for large scale data centers and big data systems
- 2016-2017 **Coordinator for Politecnico di Milano research unit** for the EUBRA-BIGSEA H2020 project involved in the performance analysis and definition of run time management policies of Big Data and computing intensive applications
- 2015-2018 **Coordinator for Politecnico di Milano research unit** for the DICE H2020 project on model driven design, quality assessment, and optimization of Data-Intensive applications. Standardization leader and Ethics issue manager for data privacy

2016-2017 **Coordinator for Politecnico di Milano research unit** for the UrbanMob LISA Cineca project on development of urban mobility applications with data and performance quality

2012-2015 Participated to MODAClouds IP research project at Politecnico di Milano on design and run-time management of applications targeting multiple Clouds. Developing design-time exploration with performance and availability guarantees. **WP Leader**

2008-2013 Participation in SMScom IDEAS-ERC research project at Politecnico di Milano on design of situational application with run-time performance guarantees

2008-2012 Participation in s-Cube, the European Network of Excellence in Software Services and Systems developing optimization algorithms for composed Web services

2008-2011 Participation in Q-ImPrESS FET/STREP research project at Politecnico di Milano on the model-driven-development of SOA systems with QoS guarantees

2005-2008 Participation in WS-Diamond FET/STREP research project at Politecnico di Milano on the design of repair actions in self-healing web services systems

ITALIAN NATIONAL RESEARCH PROJECT

2005-2008 Participation in DISCORSO FAR research project at Politecnico di Milano on the design of optimization and Web services composition algorithms to support Small and Medium Enterprises and industrial districts

2003-2005 Participation in MAIS FIRB research project at Politecnico di Milano on analysis of multi-channel adaptive Information Systems

technology transfer

OPEN SOURCE TOOLS, PRODUCTS AND SERVICES

2020-2021 ANDREAS: Artificial intelligence training scheduler for accelerated resource clusters. Advanced scheduler for GPU based clusters to support deep learning models training. Funded by TETRAMAX technology transfer project, achieved TRL 8, commercialization already started (<https://www.e4company.com/en/andreas-artificial-intelligence-training-scheduler-for-accelerated-resource-clusters/>).

2021- SPACE4AI-D: System Performance and Cost Evaluation on Cloud for AI applications Design. A novel open-source tool to support design space exploration, component placement and resource selection of AI applications running on cloud-edge systems. One of the main assets of the on-going H2020 AI-SPRINT project (<https://gitlab.polimi.it/ai-sprint/space4ai-d>).

2017- aMLLib: a Machine Learning Library. An open-source library to train performance models for estimating the performance of complex software systems. Applied to estimate performance of Spark systems and deep neural networks model training on GPUs. Allowed to improve the performance models of Spark inventors. Currently used within the H2020 AI-SPRINT and LIGATE research projects (<https://github.com/eubr-atmosphere/a-MLLibrary>)

2016-2018 D-SPACE4Cloud: Data intensive System Performance and Cost Evaluation on Cloud. DICE open-source tool for the design-time optimisation of big data applications based on Hadoop and Spark. One of the main H2020 DICE project assets led to the funding of the H2020 AI-SPRINT project and currently evolving into SPACE4AI-D (<https://github.com/deib-polimi/diceH2020-space4cloudsWS>).

2016-2017 OPT_IC & OPT_JR. A set of open-source run-time optimization-based resource management tools for Spark applications. One of the main H2020 EUBRA-BIGSEA project assets. Global optimum solution gap reduced by 30% with respect to an alternative method by Spark inventors (https://github.com/eubr-bigsea/OPT_IC, https://github.com/eubr-bigsea/opt_jr)

2013-2015 SPACE4Cloud: System Performance and Cost Evaluation on Cloud. An open-source design-time tool to support design space exploration of enterprise applications running on cloud. One of the main FP7 MODAClouds project assets. Led to the funding of the H2020 DICE project and evolved into D-SPACE4Cloud. provides between 21% and 85% costs savings in comparison with alternative methods (<https://github.com/deib-polimi/modaclouids-space4cloud>).

2006-2007	WASFO: Workload Analysis for Server Farm Optimization. A software tool for the capacity planning of autonomic virtualized server farms. One of the main outputs of my PhD studies, led to a patent already granted in USA and one pending patent in Europe.
2015-2016	Consultancy services: feasibility analysis for the migration of a virtual travel agency software to cloud for a leading operator in Italy.
2004-2005	Consultancy services: performance analysis of a virtualized Internet Banking software system within a server consolidation project for a large bank in Italy.

General information on my open-source tools can be found at https://ardagna.faculty.polimi.it/?page_id=465

service activities

INTERNATIONAL CONFERENCE TECHNICAL PROGRAM COMMITTEE MEMBER (main)

- IEEE CLOUD 2021-2009
- IEEE Big Data 2016-2014, 2019-2017 Senior PC member
- IEEE ICWS 2012- 2009
- IEEE/ACM UCC 2018- 2020
- IEEE ICDCS 2017, 2012
- IEEE ICPADS 2012
- IEEE DSS 2018-2017
- CIoT 2016
- IEEE BigDataSE 2016
- IEEE IC2E 2015
- OBD 2015
- IEEE ICAC 2015-2014
- IFIP DAIS 2014
- IEEE ICA3PP 2018, 2016-2015
- Closer 2019-2017, 2015- 2013
- IEEE BDDS 2013
- IEEE MASCOTS 2014-2013
- IEEE CGC 2013
- IEEE HPCC 2013
- IEEE SmartData 2017
- LOD 2019
- QoS 2011-2009
- FiCloud 2014
- CSC 2012
- MobiWIS 2011
- CGC 2011
- SEASS 2011
- Intensive 2009
- IEEE/INFORMS SOLI 2009
- IESA 2007-2006

CONFERENCE ORGANIZATION COMMITTEES

- IFIP WG 7.3 Performance 2021 General chair, Milan, Italy
- IFIP WG 7.3 Performance 2020 General chair, Milan, Italy
- ICGreen 2015 General chair, Milan, Italy
- BPM 2008 Local organization chair, Milan, Italy

EDITORIAL BOARDS

- Since March 2018, Editorial board member of the IEEE Transactions on Cloud Computing
- Since 2015 Editorial board member of the Springer open access BioMed Big Data Analytics journal
- 2015 Guest co-Editor, Springer Computing, Sustainable Computing Systems and Applications special issue
- 2014 Guest co-Editor, ACM SIGMETRICS Performance Evaluation Review, Performance and Resource Management in Big Data Applications special issue
- 2013 Guest co-Editor, Springer Computing, Cloud Computing special issue
- Since 2012, Editorial Board Member of the International Journal of Cloud-Computing and Super-Computing

INTERNATIONAL WORKSHOPS CO-ORGANIZER AND CO-CHAIR

- Third International Workshop on Scalable Deep Learning over Parallel And Distributed Infrastructures (SCADL) 2021, at IPDPS 2021
- Second International Workshop on Scalable Deep Learning over Parallel And Distributed Infrastructures (SCADL) 2020, at IPDPS 2020
- Second International Workshop On Quality-Aware Devops (QUDOS) 2016, at ISSTA 2016
- First International Workshop On Quality-Aware Devops (QUDOS) 2015, at ESEC/FSE 2015
- First International Workshop on Multi-Cloud applications and federated clouds (Multi-Cloud) 2013, at ICPE 2013
- First International Workshop on Run-time models for Self-managing Systems and Applications (ROSSA) 2009, at Valuetools 2009
- First International workshop on Quality of Self-healing Web Services (QSWs) 2008, at BPM 2008

STEERING COMMITTEES

- Steering Committee of the International Workshop On Quality-Aware Devops (QUDOS) 2017-

INTERNATIONAL JOURNALS REVIEWING SERVICES (main)

- IEEE Transactions on Software Engineering
- IEEE Transactions on Services Computing
- IEEE Transactions on Computers
- IEEE Transactions on Cloud Computing
- IEEE Transactions on Storage
- IEEE Transactions on Network and Service Management
- IEEE Systems Journal
- ACM Transactions on the Web
- ACM Transactions on Modeling and Performance Evaluation of Computing Systems
- ACM Transactions on Autonomous and Adaptive Systems
- IEEE Internet Computing
- IEEE Transactions on System Man and Cybernetics, Part C
- Journal of Systems and Software, Elsevier
- Journal of Parallel and Distributed Computing, Elsevier
- European Journal of Operational Research, Elsevier
- Journal on Selected Areas in Communications

- Computers in Industry, Elsevier
- Information and Software Technology, Elsevier
- Journal of Cooperative Information Systems
- Journal of Information Technology, Kluwer

EVALUATION OF EUROPEAN AND NATIONAL RESEARCH PROJECTS

- Barcelona Computing Center Stars program evaluator and chair of the evaluators group, 2019
- ERC Consolidator grants expert evaluator, 2017
- Member of the Netherlands Research Council for the Engineering and Applied Sciences Executive Board, 2015, 2016
- Member of the Netherlands Organisation for Scientific Research Executive Board, 2013
- Member of the Austrian Science Fund Executive Board, 2012, 2013

EXTERNAL REFEREE ACADEMIC PROMOTION

- External referee for the assessment of University of Calgary applications for Promotion to Professor, 2018

ROLES WITHIN IEEE COMPUTER SOCIETY

- May 2014 - July 2015, General Chair of the IEEE Special Technical Community on Sustainable Computing
- 2013-2014, Secretary/Treasurer of the IEEE Special Technical Community on Sustainable Computing
- 2011-2103, Information Officer of the IEEE Special Technical Community on Sustainable Computing

ROLES WITHIN COMPUTER SCIENCE ITALIAN ASSOCIATIONS

- 2017-2020 member of AEIT (Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni) and AICT society
- Since 2011 member of the IT Systems Architect working group within AICA (Associazione Italiana per l'Informatica ed il Calcolo Automatico)

KEYNOTE SPEECHES

- Cloud and Multi-Cloud Computing: Current Challenges and Future Applications. A Quality of Service Perspective, 23/5/2015. PESOS Workshop at ICSE 2015

INVITED SEMINARS

1. Performance Prediction of GPU-based Deep Learning Applications. Spanish Supercomputing Network 13th Users Conference 2019, Zaragoza, Spain, 19/9/2019
2. Model Driven Development and QoS Assessment of Cloud Applications, Polytechnic University of Catalonia, Barcelona, Spain, 7/5/2014
3. Model Driven Development and QoS Assessment of Cloud Applications, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA, 15/10/2013
4. QoS Modeling and Evaluation in Cloud Environments, University of Austria at Timisoara, Timisoara, Romania, 24/9/2013
5. QoS Modeling and Evaluation in Cloud Environments, 7th Advanced Summer School in Service Oriented Computing, Crete, Greece, 4/7/2013

6. Generalized Nash Equilibria for the Service Provisioning Problem in Cloud Systems, IRISA, Rennes, France, 8/11/2012
7. Energy-Aware Autonomic Resource Allocation in Multitier Virtualized Environment (in very Large Service Centers), Imperial College, London, UK, 1/6/2012
8. A Game Theoretic Formulation of the Service Provisioning Problem in Cloud Systems, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 1/7/2011
9. A Game Theoretic Formulation of the Service Provisioning Problem in Cloud Systems, BCAM, Bilbao, Spain, 27/5/2011
10. Identification of Linear Parameter Varying State Space Models for the Performance Management of Autonomic Systems, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 23/7/2009
11. Green Active Management of Energy in IT systems, Karlsruhe University, Karlsruhe, Germany, 29/4/2009
12. Active Management of Energy in IT systems, Italy, Università di Modena e Reggio Emilia, Modena, Italy, 24/10/2008
13. Adaptive Service Composition in Flexible Processes, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 4/5/2007
14. Capacity Management and Planning for Modern Virtualized IT Infrastructures, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 30/4/2007

TUTORIALS

1. Model-Driven Management of Multi-Cloud Applications, UCC 2014. London, UK, 11/12/2014. Joint tutorial with Giuliano Casale and Nicolas Ferry
2. Model Driven Design of Cloud Applications with a-priori Quality of Service Guarantees. SYNASC MICAS 2014. Timisoara, Romania, 22-23/9/2014. Joint tutorial with Marcos Almeida, Nicolas Ferry, and Juan F. Perez
3. Model Driven Design of Cloud Applications with a-priori Quality of Service Guarantees. ASE 2014. Västerås, Sweden, 16/9/2014. Joint tutorial with Marcos Almeida, Giuliano Casale, and Nicolas Ferry

**teaching
experience**
2001-2015

UNDERGRADUATE TEACHING

- 2006-2017, Principles of Computer Systems, Politecnico di Milano
- 2008-11, Computer Science Project, Politecnico di Milano
- 2003-04, Web based Information Systems, Politecnico di Milano
- 2003-2008: Information Systems Platforms, Politecnico di Milano

GRADUATE TEACHING

- 2016- : Algorithms and Parallel Computing, Politecnico di Milano
- 2021-2022: Computer Infrastructures, Politecnico di Milano
- 2019-2020: Computer Infrastructures, Politecnico di Milano
- 2018-2019: Complex Networks, PhD course Politecnico di Milano (with Prof. Ana Paulo Couto Silva)
- 2015-2016: Computer Systems, Politecnico di Milano
- 2012-2014, 2015-2019: Multi-disciplinary Project, Politecnico di Milano, Master and PhD program Politecnico di Milano
- 2011-12; 2013-14: Cloud Computing from a Software Engineering perspective, Master and PhD program Politecnico di Milano (with Prof. Elisabetta Di Nitto)
- 2007-2008: Autonomic Services, PhD course Politecnico di Milano (with Prof. Barbara Pernici)
- 2015-2016: Graduate seminars on Computer Infrastructures, Politecnico di Milano

- 2013-2014: Graduate seminars on Software Engineering, Politecnico di Milano
- 2001-2006: Graduate seminars on Information System platforms and security, Politecnico di Milano
- 2005-: Instructor in many professional master programs in the context of the Politecnico educational offer through Cefriel and MIP (main topics: Information Systems, Performance Evaluation, Virtualization and Cloud Computing, Big Data, Hadoop, Spark, Spark Machine Learning and Deep Learning)

RESEARCH SUPERVISION

- 2021- : Supervisor for PhD. Student Bruno Guindani
- 2020- : Supervisor for PhD. Student Federica Filippini
- 2020- : Postdoctoral research advisor for Dr. Hamta Sedghani
- 2017-2020: Postdoctoral research advisor for Dr. Marco Lattuada (R&D STMicroelectronics)
- 2018-2019: Postdoctoral research advisor for Dr. Eugenio Gianniti (R&D Engie)
- 2017- 2018: Postdoctoral research advisor for Dr. Enrico Barbierato (RTD-A, Università Cattolica)
- 2016-2017: Postdoctoral research advisor for Dr. Athanasia Evangelinou (European Commission Officer, HPC research unit)
- 2012- 2016: Postdoctoral research advisor for Dr. Michele Ciavotta (RTD-B, Università Milano Bicocca)
- 2009-2010: Postdoctoral research advisor for Dr. Barbara Stefania Panicucci
- 2015- 2018: Supervisor for PhD. Student Eugenio Gianniti
- 2013- 2016: Supervisor for PhD. Student Giovanni Paolo Gibilisco (R&D Akams)
- 2010-2012: Co-Supervisor for PhD. Student Niccolò Maria Calcavecchia
- 2015-2016: Supervisor of the Minor research for PhD. Student Alessandro Maria Rizzi
- 2015: Supervisor of the Minor research for PhD. Student Lorela Cano
- 2013: Supervisor of the Minor research for PhD. Student Santo Lombardo
- 2012: Supervisor of the Minor research for PhD. Student Silvia Lovergine
- 2010: Supervisor of the Minor research for PhD. Student Chiara Sandionigi

PHD EXAMINER

- Yali Zhao, PhD Evaluator, The University of Melbourne, 2020
- SPEC 2019 Award program committee
- Marcelo Amaral, PhD Evaluation commission, Polytechnic University of Catalonia, 2019
- Gustavo Cipriano Motta Sousa, PhD Evaluation commission, University of Lille, 2018
- Yasaman Amannejad, PhD Evaluation commission, University of Calgary, 2017
- Marco Abundo, PhD Thesis reviewer, Università Tor Vergata, 2016
- Nicolas Poggi, PhD Evaluation commission, Polytechnic University of Catalonia, 2014
- Ajay Kattepur, PhD Evaluation commission, INRIA-IRISA, 2012

patents

D. Ardagna, E. Conforti, C. Francalanci, M. Gatti, S. Lucchini, S. Morsello, M. Trubian. Method, system and computer program for configuring server farms at minimum cost. Politecnico di Milano - IBM. Patent number US7886036, USA Patent Office. Patent pending EP06123004, European Patent Office.

Full List of Publications

Editorial Work

1. *D. Ardagna*, C. Capiello. Springer Computing. Special Issue on Sustainable Computing Systems and Applications. Springer 2017.
2. *D. Ardagna*, A. Brunnert, G. Casale, A. van Hoorn. Proceedings of the second International Workshop on Quality-Aware DevOps. ACM 2016.
3. *D. Ardagna*, A. Brunnert, G. Casale, A. van Hoorn. Proceedings of the first International Workshop on Quality-Aware DevOps. ACM 2015.
4. *D. Ardagna*, M. S. Squillante. SIGMETRICS Performance Evaluation Review Special Issue on Performance and Resource Management in Big Data Applications. ACM DL 2015.
5. *D. Ardagna*, C. Capiello. Proceedings of Fourth International Conference on Green IT Solutions. SCITEPRESS 2015.
6. *D. Ardagna*, L. Schubert. Springer Computing. Special Issue on Cloud Computing. Springer 2015.
7. *D. Ardagna*, L. Schubert. Proceedings of the 2013 international workshop on Multi-cloud applications and federated clouds. ACM DL 2013.
8. *D. Ardagna*, L. Zhang. Run-time Models for Self-managing Systems and Applications. Springer Autonomic Computing Series 2010.
9. *D. Ardagna*, M. Mecella, J. Yang. Business Process Management Workshops, BPM 2008 International Workshops, Milano, Italy, September 1-4, 2008. Revised Papers. Lecture Notes in Business Information Processing. Springer 2009.

International Journals

1. M. Ciavotta, G. P. Gibilisco, *D. Ardagna*, E. Di Nitto, M. Lattuada, M. A. Almeida da Silva. Architectural Design of Cloud Applications: a Performance-aware Cost Minimization Approach. IEEE Transactions on Cloud Computing. To Appear. 1-18. DOI: 10.1109/TCC.2020.3015703. (Scimago Q1).
2. M. Lattuada, E. Barbierato, E. Gianniti, *D. Ardagna*. Optimal Resource Allocation of Cloud-Based Spark Applications. IEEE Transactions on Cloud Computing. To Appear. 1-16. DOI: 10.1109/TCC.2020.2985682. (Scimago Q1).
3. *D. Ardagna*, E. Barbierato, E. Gianniti, M. Gribaudo, T.B.M. Pinto, A.P.C da Silva, J. M. Almeida. Predicting the Performance of Big Data Applications on the Cloud. Journal of Super Computing. 77(2), 1321-1353. 2021. (Scimago Q2).
4. E. Gianniti, M. Ciavotta, *D. Ardagna*. Optimizing Quality-Aware Big Data Applications in the Cloud. IEEE Transactions on Cloud Computing. 9(2), 737-752. 2021. (Scimago Q1).
5. *D. Ardagna*, M. Ciavotta, R. Lancellotti, M. Guerriero. A Hierarchical Receding Horizon Algorithm for QoS-driven control of Multi-IaaS Applications. IEEE Transactions on Cloud Computing. 9(2), 418 - 434. 2021. (Scimago Q1).
6. E. Ataie, R. Entezari-Maleki, L. Rashidi, K. S. Trivedi, *D. Ardagna*, A. Movaghar. Hierarchical Stochastic Models for Performance, Availability, and Power Consumption Analysis of IaaS Clouds. IEEE Transactions on Cloud Computing. 7(4), 1039-1056. 2019. (Scimago Q1).
7. S. Karimian-Aliabadi, *D. Ardagna*, R. Entezari-Maleki, E. Gianniti, A. Movaghar. Analytical Composite Performance Models for Big Data Applications. Journal of Network and Computer Applications. Elsevier. 142(15), 63-75. 2019. (Scimago Q1).
8. A. S. Alic, J. Almeida, G. Aloisio, N. Andrade, N. Antunes, *D. Ardagna*, R. M. Badia, T. Basso, I. Blanquer, T. Braz, A. Brito, D. Elia, S. Fiore, D. Guedes, M. Lattuada, D. Lezzi, M. Maciel, W. Meira Jr., D. Mestre, R. Moraes, F. Morais, C. E. Pires, N. Puchalski Kozievitich, Walter dos Santos, P. Silva, M. Vieira. BIGSEA: A Big Data analytics platform for public transportation information. Future Generation Computer Systems. Elsevier. 96, 243-269. 2019. (Scimago Q1).

9. D. Ardagna, C. Cappiello, W. Samà, M. Vitali. Context-aware Data Quality Assessment for Big Data. *Future Generation Computer Systems*. Elsevier. 89, 548-562. 2018. (Scimago Q1).
10. L. Cano, G. Carello, D. Ardagna. A Framework for Joint Resource Allocation of MapReduce and Web Service Applications in a Shared Cloud Cluster. *Journal of Parallel and Distributed Computing*, Elsevier. 120, 127-147. 2018. (Scimago Q2).
11. M. Malekimajd, D. Ardagna, M. Ciavotta, E. Gianniti, M. Passacantando, A. M. Rizzi. Capacity Allocation and Admission Control of MapReduce Jobs. *The Journal of Supercomputing*. 74(10), 5314-5348. 2018. (Scimago Q2).
12. E. Ataie, R. Entezari-Maleki, S. E. Etesami, B. Egger, D. Ardagna, A. Movaghar. Power-aware Performance Analysis of Self-Adaptive Resource Management in IaaS Clouds. *Future Generation Computer Systems*. Elsevier. 86, 134-144. 2018. (Scimago Q1).
13. J. Anselmi, D. Ardagna, J. C.S. Lui, A. Wierman, Y. Xu, Z. Yang. The Economics of the Cloud. *ACM Transactions on Modeling and Performance Evaluation of Computing Systems*. 2(4), 1-23. 2017.
14. M. Scavuzzo, E. Di Nitto, D. Ardagna. Experiences and Challenges in Building a Data Intensive System for Data Migration. *Empirical Software Engineering*. 23(1), 52-86. 2018. (Scimago Q2).
15. A. Evangelinou, M. Ciavotta, D. Ardagna, A. Kopaneli, G. Kousiouris, T. Varvarigou. Enterprise Applications Cloud Rightsizing through a Joint Benchmarking and Optimization Approach. *Future Generation Computer Systems*. Elsevier. 78(1), 102-114. 2018. (Scimago Q1).
16. F. Ballio, D. Molinari, G. Minucci, M. Mazuran, C. Arias, S. Menoni, F. Atun, D. Ardagna, N. Berni, C. Pandolfo. The RISPOSTA procedure for the collection, storage and analysis of high quality, consistent and reliable damage data in the aftermath of floods. *Journal of Flood Risk Management*. Wiley on line. 604-615. 2018. (Scimago Q1).
17. E. Gianniti, A. M. Rizzi, E. Barbierato, M. Gribaudo, D. Ardagna. Fluid Petri Nets for the Performance Evaluation of MapReduce and Spark Applications. *ACM SIGMETRICS Performance Evaluation Review*. 44(4), 23-36. 2017.
18. D. Ardagna, M. Ciavotta, M. Passacantando. Generalized Nash Equilibria for the Service Provisioning Problem in Multi-Cloud Systems. *IEEE Transactions on Services Computing*. 10(3), 381-395. 2017. (Scimago Q1).
19. M. Ciavotta, G. P. Gibilisco, D. Ardagna. A Mixed Integer Linear Programming Optimization Approach for Multi-Cloud Capacity Allocation. *Journal of Systems and Software*. Elsevier. 123(1), 64-78. 2017. (Scimago Q1).
20. M. Passacantando, D. Ardagna, A. Savi. Service Provisioning Problem in Cloud and multi-Cloud Systems. *INFORMS Journal on Computing*. 28(2), 265-277. 2016. (Scimago Q1).
21. M. Malekimajd, D. Ardagna, M. Ciavotta, A. M. Rizzi, M. Passacantando. Optimal Map Reduce Job Capacity Allocation in Cloud Systems. *ACM SIGMETRICS Performance Evaluation Review*, 42 (4), 50-60. 2015.
22. D. Ardagna, G. Casale, M. Ciavotta, J. F. Perez, W. Wang. Quality-of-Service in Cloud Computing: Modeling Techniques and Their Applications. *Journal of Internet Services and Applications*. 5(1), 1-17, 2014. (Scimago Q2).
23. B. Addis, D. Ardagna, A. Capone, G. Carello. Energy-aware Joint Management of Networks and Cloud Infrastructures. *Computer Networks*. Elsevier. 70, 75-95, 2014. (Scimago Q1).
24. J. Anselmi, D. Ardagna, M. Passacantando. Generalized Nash Equilibria for SaaS/PaaS Clouds. *European Journal of Operational Research*. 236(1), 326-339, 2014. (Scimago Q1).
25. J. Anselmi, D. Ardagna, J. C. S. Lui, Adam Wierman, Y. Xu, Z. Yang. The economics of the cloud: price competition and congestion. *ACM SIGMETRICS Performance Evaluation Review*. 41(4), 47-49, 2014.
26. J. Anselmi, D. Ardagna, J. C. S. Lui, Adam Wierman, Y. Xu, Z. Yang. The economics of the cloud: price competition and congestion. *SIGecom Exchanges* 13(1), 58-63, 2014.
27. C. Sandionigi, D. Ardagna, G. Cugola, C. Ghezzi. Optimizing Service Selection and Allocation in Situational Computing Applications. *IEEE Transactions on Services Computing*. 6(3), 414-428, 2013. (Scimago Q1).
28. D. Ardagna, B. Panicucci, M. Passacantando. Generalized Nash Equilibria for the Service Provisioning Problem in Cloud Systems. *IEEE Transactions on Services Computing*. 6(4), 429-442, 2013. (Scimago Q1).
29. B. Addis, D. Ardagna, B. Panicucci, M. Squillante, L. Zhang. A Hierarchical Approach for the Resource Management of Very Large Cloud Platforms. *IEEE Transactions on Dependable and Secure Computing*. 10(5), 253-272, 2013. (Scimago Q1).

30. A. Koziolok, *D. Ardagna*, R. Mirandola. Hybrid Multi-Attribute QoS Optimization in Component Based Software Systems. *Journal of Systems and Software*. Elsevier. 86(10), 2542-2558, 2013. (Scimago Q1).
31. *D. Ardagna*, B. Panicucci, M. Trubian, L. Zhang. Energy-Aware Autonomic Resource Allocation in Multi-tier Virtualized Environments. *IEEE Transactions on Services Computing*. 5(1), 2-19, 2012. (Scimago Q1).
32. *D. Ardagna*, S. Casolari, M. Colajanni, B. Panicucci. Dual Time-scale Distributed Capacity Allocation and Load Redirect Algorithms for Cloud Systems. *Journal of Parallel and Distributed Computing*, Elsevier. 72(6), 796-808, 2012. (Scimago Q2).
33. M. Tanelli, *D. Ardagna*, M. Lovera. Identification of LPV state space models for Autonomic Web service systems. *IEEE Transactions on Control Systems Technology*. 19(1), 93-103, 2011. (Scimago Q1).
34. *D. Ardagna*, L. Baresi, S. Comai, M. Comuzzi, B. Pernici. A Service-based Framework for Flexible Business Processes. *IEEE Software*. 28(2), 61-67, 2011. (Scimago Q2).
35. *D. Ardagna*, R. Mirandola. Per-flow Optimal Service Selection for Web Services Based Processes. *Journal of Systems and Software*, Elsevier. 83(8), 1512-1523, 2010. (Scimago Q1).
36. J. Almeida, V. Almeida, *D. Ardagna*, I. Cunha, C. Francalanci, M. Trubian. Joint Admission Control and Resource Allocation in Virtualized Servers. *Journal of Parallel and Distributed Computing*, Elsevier. 70(4), 344-362, 2010. (Scimago Q2).
37. *D. Ardagna*, C. Francalanci, M. Trubian. Joint Optimization of Hardware and Network costs for Distributed Computer Systems. *IEEE Transactions on Systems Man and Cybernetics, Part A*. 38, 470-484, 2008.
38. *D. Ardagna*, B. Pernici. Adaptive Service Composition in Flexible Processes. *IEEE Transactions on Software Engineering*. 33(6), 369-384, 2007. (Scimago Q1).
39. *D. Ardagna*, M. Comuzzi, E. Mussi, P. Plebani, B. Pernici. PAWS: a framework for processes with adaptive Web services. *IEEE Software*. 24(6), 39-46, 2007. (Scimago Q2).
40. *D. Ardagna*, M. Trubian, L. Zhang. SLA Based Resource Allocation Policies in Autonomic Environments. *Journal of Parallel and Distributed Computing*. 67, 259-270, Elsevier, 2007. (Scimago Q2).
41. *D. Ardagna*, B. Pernici. Dynamic Web Service Composition with QoS Constraints. *International Journal of Business Process Integration and Management (IJBPIIM)*. 1(4), 233-243, 2006. (Scimago Q3).
42. *D. Ardagna*, C. Francalanci, M. Trubian. A Multi-Model Algorithm for the Cost-Oriented Design of Internet-based Systems. *Information Sciences*, 176(21), 3105-3131, Elsevier. 2006. (Scimago Q1).
43. *D. Ardagna*, C. Francalanci. Joint Optimization of Hardware and Network Costs. *Journal of Parallel and Distributed Computing* 66(3), 469-485 Elsevier. 2006. (Scimago Q2).
44. *D. Ardagna*, C. Francalanci. A Cost-Oriented Approach for the Design of IT Architectures. *Journal of Information Technology*. 20(1), 32-51. 2005. (Scimago Q1).
45. *D. Ardagna*, C. Francalanci, V. Piuri. Designing and Rightsizing the Information System Architecture. *Information Systems Frontiers* 6(3), 229-245, Kluwer. 2004. (Scimago Q2).

International Conferences

1. H. Sedghani, F. Filippini, *D. Ardagna*. A randomized greedy method for AI applications component placement in Computing Continua. *IEEE JCC 2021 Proceedings (12th IEEE International Conference On JointCloud Computing)*. 1-6. To Appear.
2. A. Gulino, A. Canakoglu, S. Ceri, *D. Ardagna*. Performance Prediction for Data-driven Workflows on Apache Spark. *MASCOTS 2020 (28th IEEE International Symposium on the Modeling, Analysis, and Simulation of Computer and Telecommunication Systems)*. 1-8. Nice, France.
3. F. Filippini, M. Lattuada, A. Jahani, M. Ciavotta, *D. Ardagna*, E. Amaldi. Hierarchical Scheduling in on-demand GPU-as-a-Service Systems. *SYNASC 2020 (22nd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing)*. 125-132. Timisoara, Romania.
4. A. Jahani, M. Lattuada, M. Ciavotta, *D. Ardagna*, E. Amaldi, L. Zhang. Optimizing on-demand GPUs in the Cloud for Deep Learning Applications Training. *IEEE ICCCS 2019 Proceedings (4th IEEE International Conference on Computing, Communications and Security)*. 1-8. Rome, Italy.

5. A. Maros, F. Murai, A. P. Couto da Silva, J. M. Almeida, M. Lattuada, E. Gianniti, M. Hosseini, *D. Ardagna*. Machine Learning for Performance Prediction of Spark Cloud Applications. IEEE Cloud 2019 Proceedings. 99-106. Milan, Italy. **Acceptance rate 20.8%**. (GGS A-).
6. E. Gianniti, L. Zhang, *D. Ardagna*. Performance Prediction of GPU-based Deep Learning Application. Closer 2019 Proceedings. 279-286. Crete, Greece.
7. M. Lattuada, E. Gianniti, M. Hosseini, *D. Ardagna*, A. Maros, F. Murai, A. P. Couto da Silva, J. M. Almeida. Gray-Box Models for Performance Assessment of Spark Applications. Closer 2019 Proceedings. 609-618. Crete, Greece.
8. A. S. Alic, J. Almeida, W. Meira Jr., D. Guedes, W. dos Santos, I. Blanquer, S. Fiore, N. P. Kozievitch, N. Andrade, T. Braz, A. Brito, C. E. Pires, N. Antunes, M. Vieira, P. Silva, *D. Ardagna*, K. Fonseca, D. Lezzi, D. Elia, R. Moraes, T. Basso, W. H. Cavassin. GIS and Data: Three applications to enhance Mobility. Geoinfo 2018 Proceedings. 1-12. Campina Grande, Brazil.
9. E. Gianniti, L. Zhang, *D. Ardagna*. Performance Prediction of GPU-based Deep Learning Applications. SBAC-PAD 2018 Proceedings (30th International Symposium on Computer Architecture and High Performance Computing). 167-170. Lyon, France.
10. *D. Ardagna*, E. Barbierato, A. Evangelinou, E. Gianniti, M. Gribaudo, T. B. M. Pinto, A. Guimarães, A. P. Couto da Silva, J. M. Almeida. Performance Prediction of Cloud-Based Big Data Applications. ICPE 2018 Proceedings (9th ACM/SPEC International Conference on Performance Engineering). 192-199. Berlin, Germany.
11. M. Ciavotta, E. Gianniti, *D. Ardagna*. D-SPACE4Cloud: A Design Tool for Big Data Applications. ICA3PP 2016 Proceedings (16th International Conference on Algorithms and Architectures for Parallel Processing). 614-629. Granada, Spain.
12. *D. Ardagna*, S. Bernardi, E. Gianniti, S. Karimian Aliabadi, D. Perez-Palacin, J. I. Requeno. Modeling Performance of Hadoop Applications: A Journey from Queueing Networks to Stochastic Well Formed Nets. . ICA3PP 2016 Proceedings (16th International Conference on Algorithms and Architectures for Parallel Processing). 599-613. Granada, Spain. **Best paper award**.
13. G. P. Gibilisco, M. Li, L. Zhang, *D. Ardagna*. Stage Aware Performance Modeling of DAG Based in Memory Analytic Platforms. In IEEE Cloud 2016 Proceedings. 188-195. San Francisco, USA. **Acceptance rate 15%**. (GGS A-).
14. M. A. Almeida da Silva, *D. Ardagna*, N. Ferry, Juan F. Perez. Constellation: A multi cloud application designed with the MODAClouds integrated modeling environment. In ICSSEA 2016 Proceedings (International Conference on Software & Systems Engineering and their Applications). Paris, France.
15. A. Evangelinou, M. Ciavotta, G. Kousiouris, *D. Ardagna*. A Joint Benchmark-Analytic Approach For Design-Time Assessment of Multi-Cloud Applications. In CF2015 Proceedings (Cloud Forward Conference). 67-77. Pisa, Italy. **Best collaboration paper award (European projects track)**.
16. *D. Ardagna*, G. P. Gibilisco, M. Ciavotta, A. Lavrentev. A Multi-Model Optimization Framework for the Model Driven Design of Cloud Applications. SSBSE 2014 Proceedings (6th International Symposium on Search-Based Software Engineering). 61-76. Fortaleza, Brazil.
17. D. Molinari, M. Mazuran, C. Arias, G. Minucci, F. Atun, *D. Ardagna*. Implementing tools to meet the floods directive requirements: a “procedure” to collect, store and manage damage data in the aftermath of flood events. FRIAR 2014 Proceedings (4th International Conference on Flood Recovery, Innovation and Response). 215-226. Poznan, Poland.
18. F. Giove, D. Longoni, M. Shokrolahi Yancheshmeh, *D. Ardagna*, E. Di Nitto. An approach for the Development of Portable Applications on PaaS Clouds. Closer 2013 Proceedings. 591-601. Aachen Germany.
19. *D. Ardagna*, S. Casolari, B. Panicucci Flexible Distributed Capacity Allocation and Load Redirect Algorithms for Cloud Systems. IEEE Cloud 2011 Proceedings. 163-170. Washington DC, USA. **Acceptance rate 18%**. (GGS A-).
20. *D. Ardagna*, B. Panicucci, M. Passacantando A Game Theoretic Formulation of the Service Provisioning Problem in Cloud Systems. WWW 2011 Proceedings (20th International World Wide Web Conference). 177-186. Hyderabad, India. **Acceptance rate 12.3%**. (GGS A++).
21. *D. Ardagna*, C. Ghezzi, B. Panicucci, M. Trubian. Service Provisioning on the Cloud: Distributed Algorithms for Joint Capacity Allocation and Admission Control. Service Wave 2010 Proceedings. 1-12. Ghent, Belgium.

22. B. Addis, *D. Ardagna*, B. Panicucci, L. Zhang. Autonomic Management of Cloud Service Centers with Availability Guarantees. In IEEE Cloud 2010 Proceedings, 220-227. Miami, Florida, USA. **Acceptance rate 18%**. (GGS A-).
23. A. Martens, *D. Ardagna*, H. Koziolok, R. Mirandola, R. Reussner. A Hybrid Approach for Multi-Attribute QoS Optimisation in Component Based Software Systems. In QoSA 2010 Proceedings (6th International Conference on the Quality of Software Architectures). 84-101. Prague, Czech Republic.
24. *D. Ardagna*, M. Tanelli, M. Lovera, L. Zhang. Black-box Performance Models for Virtualized Web Service Applications. WOSP/SIPEW 2010 Proceedings (1st Joint WOSP/SIPEW International Conference on Performance Engineering). ACM DL, 153-164. San Jose, CA, USA.
25. M. Tanelli, N. Schiavoni, *D. Ardagna*, M. Lovera. Control-Oriented Multirate LPV Modelling of Virtualized Service Center Environments. CDC 2009 Proceedings (48th IEEE Conference on Decision and Control).
26. M. Tanelli, *D. Ardagna*, M. Lovera. LPV Model Identification in Virtualized Service Center Environments. SYSID 2009 Proceedings (15th IFAC Symposium on System Identification), 862-867, Saint-Malo, France.
27. M. Tanelli, *D. Ardagna*, M. Lovera. On- and off-line model identification for power management of Web service systems. CDC 2008 Proceedings (47th IEEE Conference on Decision and Control). 4497-4502, Cancun, Mexico.
28. M. Tanelli, *D. Ardagna*, M. Lovera, L. Zhang. Model Identification for Energy-aware Management of Web Service Systems. ICSOC 2008 Proceedings (6th International Conference on Service-Oriented Computing).
29. *D. Ardagna*, C. Cappiello, M. Lovera, B. Pernici, M. Tanelli. Active Energy-Aware Management of Business-Process Based Applications. Position Paper. Service Wave 2008 Proceedings, 183-195, Madrid, Spain, December 2008.
30. *D. Ardagna*, C. Ghezzi, R. Mirandola. Model Driven QoS Analyses of Composed Web Services. Service Wave 2008 Proceedings, 299-311, Madrid, Spain, December 2008.
31. *D. Ardagna*, C. Ghezzi, R. Mirandola. Rethinking the use of models in software architecture. QoSA 2008 Proceedings (4th International Conference on the Quality of Software Architectures). 1-27, Karlsruhe, Germany, October 2008.
32. B. Pernici, *D. Ardagna*, C. Cappiello. Business Process Design: Towards Service-Based Green Information Systems. IFIP 20th World Computer Congress Proceedings, 195-203, Milan, Italy, September 2008.
33. M. Tanelli, *D. Ardagna*, M. Lovera. LPV model identification for Power Management of Web service Systems. Proceedings of the 2008 IEEE Multi-conference on Systems and Control, 1171-1176, San Antonio, Texas, USA, September 2008.
34. *D. Ardagna*, S. Comai, A. Corallo, G. Giunta, L. Iandoli, N. Ingraffia. A Distributed Information System to Coordinate and Support Business Process Execution in a Cluster of Firms. GITMA07 Proceedings (8th Annual Global Information Technology Management Association World Conference), Naples, Italy, June 2007.
35. *D. Ardagna*, G. Giunta, N. Ingraffia, R. Mirandola, B. Pernici. QoS-driven Web Services Selection in Autonomic Grid Environments. GADA06 Proceedings (Int. Symposium on Grid computing, High-Performance and Distributed Applications), LNCS 4276, 1273-1289, Montpellier, November 2006.
36. *D. Ardagna*, C. Cappiello, C. Francalanci, A. Groppi. Brokering Multisource Data with Quality Constraints. ODBASE06 Proceedings (5th International Conference on Ontologies, DataBases, and Applications of Semantics), 807-817, Montpellier, November 2006.
37. J. Almeida, V. Almeida, *D. Ardagna*, C. Francalanci, M. Trubian. Resource Management in the Autonomic Service-Oriented Architecture. ICAC 2006 Proceedings (3rd International Conference on Autonomic Computing), 84-92, Dublin June 2006. **Acceptance rate 21%**. (GGS A++).
38. *D. Ardagna*, C. Cappiello, M. Comuzzi, C. Francalanci, B. Pernici. A Broker For Selecting And Provisioning High Quality Syndicated Data. ICIQ 2005 Proceedings (10th International Conference on Information Quality), 262-279. Boston, November 2005.
39. *D. Ardagna*, M. Trubian, L. Zhang. SLA Based Profit Optimization in Multi-tier Systems. IEEE NCA 2005 Proceedings (4th International Symposium on Network Computing and Applications), 263-266. Boston, July 2005.
40. *D. Ardagna*, C. Francalanci, G. Bazzigaluppi, M. Gatti, F. Silveri, M. Trubian. A Cost-oriented tool to support server consolidation. ICEIS 2005 Proceedings (7th International Conference on Enterprise Information Systems), 323-330. Miami, Florida, May 2005.
41. L. Zhang, *D. Ardagna*. SLA Based Profit Optimization in Autonomic Computing Systems. ICSOC 2004 Proceedings ACM press (2nd International Conference on Service Oriented Computing), 173-182. New York, November 2004.

42. *D. Ardagna, C. Francalanci, V. Piuri, F. Scotti. Evolutionary Design of Information Systems Architectures. ICAISC 2004 Proceedings (7th International Conference on Artificial Intelligence and Soft Computing), 1-8. Invited paper. Zakopane, Poland, June 2004.*
43. *D. Ardagna, C. Francalanci, M. Trubian. A Cost-oriented Approach for Infrastructural Design. SAC 2004 Proceedings (19th ACM Symposium on Applied Computing), 1431-1437. Nicosia, Cyprus, March 2004.*
44. *D. Ardagna, C. Francalanci, M. Trubian. A Multi-Model Algorithm for the cost-oriented design of the Information Technology Infrastructure. ECIS 2003 Proceedings (11th European Conference on Information Systems). Naples, June 2003.*
45. *D. Ardagna, C. Francalanci. A Cost-Oriented methodology for the design of Web based IT Architectures. SAC2002 Proceedings (17th ACM Symposium on Applied Computing), 1127-1133. Madrid, March 2002.*

International Workshops

1. *F. Filippini, D. Ardagna, M. Lattuada, E. Amaldi, M. Ciavotta, M. Riedl, K. Materka, P. Skrzypek, F. Magugliani, M. Cicala. ANDREAS: Artificial intelligence training scheduler for accelerated resource cluster. EMSICC 2021 Workshop Proceedings. (7th International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing). 1-6. To Appear.*
2. *H. Sedghani, D. Ardagna, M. Matteucci, G. A. Fontana, G. Verticale, F. Amarilli, R. Badia, D. Lezzi, I. Blanquer, A. Martin, K. Wawruch. Advancing Design and Runtime Management of AI Applications with AI-SPRINT. AIM 2021 Workshop Proceedings (Advances in Artificial Intelligence & Machine Learning: Applications, Challenges & Concerns). 1-8. To Appear.*
3. *E. Lomurno, S. Samele, M. Matteucci, D. Ardagna. Pareto-Optimal Progressive Neural Architecture Search. NEvo@Work ACM Workshop on NeuroEvolution@Work 2021. 1-8. To Appear.*
4. *S. Kalwar, E. Gianniti, J. Y. Kinouani, Y. Ridene, D. Ardagna. Performance Degradation and Cost Impact Evaluation of Privacy Preserving Mechanisms in Big Data Systems. INFQ@Valuetools2017 Workshop Proceedings. 82-96. Venice, Italy. 2017.*
5. *E. Gianniti, D. Ardagna, M. Ciavotta, M. Passacantando. A Game-Theoretic Approach for Runtime Capacity Allocation in MapReduce. WACC 2017 Workshops@CCGRID 2017 Proceedings (International Workshop on Assured Cloud Computing and QoS aware Big Data). 1080-1089. Madrid, Spain.*
6. *M. Ciavotta, E. Gianniti, D. Ardagna. Capacity Allocation for Big Data Applications in the Cloud. QUDOS 2017 Workshops Proceedings (3rd International Workshop on Quality-Aware DevOps. 175-176. L'Aquila, Italy.*
7. *E. Gianniti, A. M. Rizzi, E. Barbierato, M. Gribaudo. Fluid Petri Nets for the Performance Evaluation of MapReduce Applications. INFQ 2016 Workshop Proceedings. 243-250. Taormina, Italy.*
8. *E. Ataie, E. Gianniti, D. Ardagna, A. Movaghar. A Combined Analytical Modeling Machine Learning Approach for Performance Prediction of MapReduce Jobs in Hadoop Clusters. MICAS-SYNASC 2016 Workshops Proceedings (5th Workshop on Management of resources and services in Cloud and Sky computing). 431-439. Timisoara, Romania.*
9. *M. Guerriero, M. Ciavotta, G. Paolo Gibilisco, D. Ardagna. A Model-Driven DevOps framework for QoS-aware Cloud applications. MICAS-SYNASC 2015 Workshops Proceedings (4th Workshop on Management of resources and services in Cloud and Sky computing). 345-351. Timisoara, Romania.*
10. *M. Guerriero, M. Ciavotta, G. P. Gibilisco, D. Ardagna. SPACE4Cloud: a DevOps environment for multi-cloud applications. QUDOS@SIGSOFT FSE 2015 Workshops Proceedings (4th Workshop on Management of resources and services in Cloud and Sky computing). 29-30. Bergamo, Italy.*
11. *G. Casale, D. Ardagna, M. Artac, F. Barbier, E. Di Nitto, A. Henry, G. Iuhasz, C. Joubert, J. Merseguer, V. I. Munteanu, J. F. Pérez, D. Petcu, M. Rossi, C. Sheridan, I. Spais, D. Vladušić. DICE: Quality-Driven Development of Data-Intensive Cloud Applications. MiSE 2015 Workshops Proceedings (4th Workshop on Management of resources and services in Cloud and Sky computing). 78-83. Florence, Italy.*
12. *D. Ardagna, M. Ciavotta, R. Lancellotti. A Receding Horizon Approach for the Runtime Management of IaaS Cloud Systems. MICAS-SYNASC 2014 Workshops Proceedings (3rd Workshop on Management of resources and services in Cloud and Sky computing). 445-452. Timisoara, Romania.*
13. *M. Malekimajd, A. M. Rizzi, D. Ardagna, M. Ciavotta, M. Passacantando, A. Movaghar. Optimal Capacity Allocation for executing Map Reduce Jobs in Cloud Systems. MICAS-SYNASC 2014 Workshops Proceedings (3rd Workshop on Management of resources and services in Cloud and Sky computing). 385-392. Timisoara, Romania.*

14. G. Rumi, C. Colella, *D. Ardagna*. Optimization techniques within the Hadoop ecosystem: A Survey. MICAS-SYNASC 2014 Workshops Proceedings (3rd Workshop on Management of resources and services in Cloud and Sky computing). 437-444. Timisoara, Romania.
15. M. A. Almeida da Silva, *D. Ardagna*, N. Ferry, J. F. Pérez. Model-Driven Design of Cloud Applications with Quality-of-Service Guarantees: The MODAClouds Approach, MICAS Tutorial. MICAS-SYNASC 2014 Workshops Proceedings (3rd Workshop on Management of resources and services in Cloud and Sky computing). 3-10. Timisoara, Romania.
16. D. Petcu, E. Di Nitto, *D. Ardagna*, A. Solberg, G. Casale. Towards Multi-Clouds Engineering (invited paper). IEEE INFOCOM CrossClouds 2014 Workshop Proceedings. 1-6, Toronto, Canada.
17. E. Di Nitto, M. Almeida, *D. Ardagna*, G. Casale, C. Dorin Craciun, N. Ferry, V. Munteș, A. Solberg. Supporting the Development and Operation of Multi-Cloud Applications: The MODAClouds Approach. MICAS-SYNASC 2013 Workshops Proceedings (2nd Workshop on Management of resources and services in Cloud and Sky computing). 417-423, Timisoara, Romania.
18. M. Migliarina, M. Balduini, N. Shahmandi Hoonejani, E. Di Nitto, *D. Ardagna*. Exploiting Stream Reasoning to Monitor Multi-Cloud Applications. OrdRing 2013 Workshop Proceedings (2nd International Workshop on Ordering and Reasoning). 33-36, Sydney, Australia.
19. M. Migliarina, G. P. Gibilisco, *D. Ardagna*, E. Di Nitto. Model Based Control for Multi-cloud Applications. MiSE 2013 Workshop Proceedings (5th International Workshop on Modeling in Software Engineering). 37-43, San Francisco, USA.
20. D. Franceschelli, *D. Ardagna*, M. Ciavotta, E. Di Nitto. SPACE4CLOUD: A Tool for System Performance and Cost Evaluation of CLOUD Systems. Multi-Cloud 2013 Workshop Proceedings. 27-34. Prague, Czech Republic.
21. S. Benefico, E. Gjerci, R. Gonzalez Gomasasca, E. Lever, S. Lombardo, *D. Ardagna*, E. Di Nitto. The evaluation of CAP Properties on Amazon SimpleDB and Windows Azure Table Storage. MICAS-SYNASC 2012 Workshops Proceedings (1st Workshop on Management of resources and services in Cloud and Sky computing). 430-435. Timisoara, Romania.
22. F. L. Ferraris, D. Franceschelli, M. P. Gioiosa, D. Lucia, *D. Ardagna*, E. Di Nitto, T. Sharif. Evaluating the Auto Scaling Performance of Flexiscale and Amazon EC2 Clouds. MICAS-SYNASC 2012 Workshop Proceedings (1st Workshop on Management of resources and services in Cloud and Sky computing). 423-429. Timisoara, Romania.
23. S. Lombardo, E. Di Nitto, *D. Ardagna*. Issues in handling complex data structures with NoSQL databases. MICAS-SYNASC 2012 Workshop Proceedings (1st Workshop on Management of resources and services in Cloud and Sky computing). 443-448. Timisoara, Romania.
24. *D. Ardagna*, E. Di Nitto, D. Petcu, P. Mohagheghi, S. Mosser, P. Matthews, A. Gericke, C. Ballagny, F. D'Andria, C. Nechifor, C. Sheridan. MODACLOUDS: A Model-Driven Approach for the Design and Execution of Applications on Multiple Clouds. MiSE 2012 Workshop Proceedings (4th International Workshop on Modeling in Software Engineering). 50-56, Zurich, Switzerland.
25. *D. Ardagna*, R. Mirandola, M. Trubian, L. Zhang. Run-time Resource Management in SOA Virtualized Environments. QUASOSS 2009 Proceedings (1st International Workshop on the Quality of Service-Oriented Software System). 39-46, Amsterdam, The Netherlands.
26. J. Anselmi, *D. Ardagna*, P. Cremonesi. A QoS-based Selection Approach of Autonomic Grid Services. SOCP07 Workshop Proceedings (Workshop on Service-Oriented Computing Performance). 1-7, Monterey Bay, California, June 2007.
27. *D. Ardagna*, S. Lucchini, R. Mirandola, B. Pernici. Web Services Composition in Autonomic Grid Environments. GPWW06 Proceedings (International Workshop on Grid and Peer-to-Peer based Workflows). 370-381, Vienna, September 2006.
28. *D. Ardagna*, M. Comerio, F. De Paoli, S. Grega. A Hybrid Approach to QoS Evaluation. EMMSAD 2005 Workshop Proceedings (10th International Workshop on Exploring Modeling Methods in Systems Analysis and Design). 581-592. Porto, June 2005.
29. M. Adorni, F. Arcelli, *D. Ardagna*, L. Baresi, C. Batini, C. Cappiello, M. Comerio, M. Comuzzi, F. De Paoli, C. Francalanci, S. Grega, P. Losi, A. Maurino, S. Modafferi, B. Pernici, C. Raibulet, F. Tisato. The MAIS approach to web service design. EMMSAD 2005 Workshop Proceedings (10th International Workshop on Exploring Modeling Methods in Systems Analysis and Design). 387-398. Porto, June 2005.
30. *D. Ardagna*, B. Pernici. Global and Local QoS Guarantee in Web Service Selection. BPS 2005 Proceedings (Workshop on Business Processes and Services). 32-46. Nancy (France), September 2005.

Book Chapters

1. *D. Ardagna*, M. Ciavotta, G. P. Gibilisco, R. B. Desantis, G. Casale, J. F. Perez, F. D'Andria, R. Sosa Gonzalez. QoS Assessment and SLA Management. Springer, 2016.
2. N. Calcavecchia, *D. Ardagna*, E. Di Nitto. The Emergence of Load Balancing in Distributed Systems: the SelfLet Approach. Run-time Models for Self-managing Systems and Applications, Springer Autonomic Systems Series, 2010.
3. *D. Ardagna*. Process Optimization. Encyclopedia of Database Systems, Springer, 2008.
4. *D. Ardagna*, A. Avenali, L. Baresi, D. Berardi, D. Bianchini, C. Cappiello, M. Comuzzi, V. De Antonellis, F. De Rosa, D. Desideri, C. Francalanci, C. Leporelli, G. Matteucci, A. Maurino, M. Mecella, M. Melchiori, S. Modafferi, E. Mussi, B. Pernici, P. Plebani, D. Presenza. E-Services - Mobile Information Systems - Infrastructure and Design for flexibility and adaptivity, Springer, 2006.
5. *D. Ardagna*, L. Baresi, C. Batini, M. Brioschi, C. Cappiello, M. Comerio, M. Comuzzi, F. De Paoli, C. Francalanci, S. Grega, A. Maurino, S. Modafferi, N. Simeoni. Development of Services for Mobile Information Systems - Mobile Information Systems - Infrastructure and Design for flexibility and adaptivity, Springer, 2006.
6. M. Adorni, F. Arcelli, *D. Ardagna*, L. Baresi, C. Batini, C. Cappiello, M. Comerio, M. Comuzzi, F. De Paoli, C. Francalanci, S. Grega, P. Losi, A. Maurino, S. Modafferi, B. Pernici, C. Raibulet, F. Tisato. The MAIS approach to web service design. Advanced Topics in Database Research - Volume 5, Idea Group, 2006.

Books In Italian

1. F. Amarilli, *D. Ardagna*, M.G. Fugini, R. Tedesco. Impianti Informatici: Tecnologie e Applicazioni. McGraw-Hill 2007.
2. *D. Ardagna*, M.G. Fugini, B. Pernici, P. Plebani. Sistemi Informativi Basati su Web. Franco Angeli 2006.
3. *D. Ardagna*, L. Arisi, A. Biffi, L. Buccoliero, S. Calciolari, C. Francalanci, P. Ganugi, L. Heller, G. Manzoni, A. Martegani, R. Calmieri, F. Timpano, P. Facchi, P. Vercesi. E-government nella Pubblica Amministrazione Lecchese. Franco Angeli 2004.
4. G. Bracchi, C. Francalanci, A. Bognetti, M. Giorgino, T. Monfroglio, *D. Ardagna*, R. Bracchi, C. Cappiello, E. Gilardoni, R. Padovani. La banca multicanale in Europa. Tecnologia, qualità dei servizi e profittabilità. Edibank 2002.

Other Publications

1. M. Ciavotta, A. Jahani, M. Lattuada, *D. Ardagna*, E. Amaldi - GPU Scheduling for Deep Learning – International Conference on Optimization and Decision Science (ODS 2019). September 2019. Extended Abstract.
2. M. Scavuzzo, E. Di Nitto, *D. Ardagna*. Experiences and challenges in building a data intensive system for data migration. ICSE 2018, 93. May 2018.
3. M. Ciavotta, *D. Ardagna*, A. Koziolk. Palladio Optimization Suite: QoS optimization for component-based Cloud applications. Valuetools 2015. Extended Abstract. Berlin, Germany.
4. M. Ciavotta, E. Gianniti, *D. Ardagna*, M. Passacantando. Game-Theoretic Approach to Joint Admission Control and Capacity Allocation for MapReduce. AIRO 2015. Pisa, Settembre 2015. Extended Abstract.
5. B. Addis, *D. Ardagna*, G. Carello, A. Capone. Energy-aware joint management of networks and Cloud infrastructures. AIRO 2015. Pisa, Settembre 2015. Extended Abstract.
6. M. Almeida, *D. Ardagna*, N. Ferry, J.F. Pérez. Model-Driven Design of Cloud Applications with Quality-of-Service Guarantees: the MODAClouds Approach. Timisoara, September 2014. Extended Abstract.
7. M. Ciavotta, *D. Ardagna*, M. Passacantando. Generalized Nash Equilibria for the Service Provisioning Problem in Multi-Cloud Systems. AIRO 2014. Como, Settembre 2014. Extended Abstract.
8. D. Molinari, M. Mazuran, C. Arias, G. Minucci, F. Atun, *D. Ardagna*. PoliRisposta: Overcoming present limits of flood damage data. European Geosciences Union General Assembly 2014. Vienna, April 2014. Extended Abstract.
9. J. Anselmi, *D. Ardagna*, J. C. S. Lui, A. Wierman, Y. Xu, Z. Yang. The economics of the cloud: price competition and congestion. NetEcon 2013. Pittsburgh, June 2013. Extended Abstract.

10. *D. Ardagna*, M. Caldirola. Tecnologie di virtualizzazione: evoluzione in atto. AEIT, 16-21, Luglio-Agosto 2010. Invited Paper.
11. *D. Ardagna*, L. Baresi, S. Comai, M. Comuzzi, B. Pernici, M. Pianciamore, S. Prandin. Una Piattaforma di Servizi Avanzata a Supporto di Distretti Cooperativi: il progetto DISCoRSO. ITAIS 2007. Venezia, Ottobre 2007.
12. *D. Ardagna*, M. Giorgetta, M. Trubian. Optimum Servers Partitioning in Autonomic Computing Infrastructure. AIRO 2006. Cesena, Settembre 2006. Extended Abstract.
13. *D. Ardagna*, M. Trubian. Resource Allocation Optimization in Multi-tier Data Centers with Strict QoS Performance Guarantees. AIRO 2005. Camerino, Settembre 2005. Extended Abstract.
14. *D. Ardagna*, B. Pernici. Global and Local QoS Constraints Guarantee in Web Service Selection. ICWS 2005 Poster Track Proceedings (3rd IEEE International Conference on Web Services), 462-463. Orlando, July 2005.
15. L. Zhang, *D. Ardagna*. SLA Based Profit Optimization in Web Systems. WWW 2004 Poster Track (13th International World Wide Web Conference), 462-463. New York, May 2004.
16. *D. Ardagna*, C. Francalanci, E. Zavarise. Internet sostituirà le attuali infrastrutture telefonica e televisiva? SMAU Ricerche. March 2002. Invited Paper.
17. *D. Ardagna*, L. Bazzardi, P. Facchi, C. Francalanci. Internet, standardizzazione tecnologica e riduzione dei costi per le imprese: il primo passo verso ritorni positivi. SMAU Ricerche. March 2002. Invited Paper.
18. *D. Ardagna*, C. Francalanci, M. Trubian. Cost oriented optimization of information technology (IT) infrastructures. AIRO 2002. L'Aquila, Settembre 2002. Extended Abstract.