CURRICULUM VITAE ET STUDIORUM

Danilo Ardagna

Politecnico di Milano,
Dipartimento di Elettronica, Informazione e Bioingegneria
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Born: June 8, 1973 - Monza (MB), Italy
Nationality: Italian

Highlights

150+ peer-reviewed publications, including **58 journal** papers (**37** in Scimago **Q1** ranking), **20 IEEE/ACM Transactions** and **1** top-level A++/A+ conference

Co-author of **94** scientific publications on **peer-reviewed conferences/workshops**
Co-author of **7 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)**
18 Invited Talks/Seminars/Panels (2007-2023)
3 tutorials

Included in the **World's Top 2% Scientist ranking** (according to "Updated science-wide author databases of standardized citation indicators," **October 2023**, **November 2022**)

Three best paper awards

IFIP Working Group 7.3 member, Computer System Modeling (Since May 2024)

Best project award among the 3rd call for **Value Chain Technology Transfer** H2020 **TETRAMAX** - ANDREAS (2022)

Co-applicant for several **European and national/industrial funded projects**, totalling **3.2mln euros** of funding to date

Google Cloud for Education May 2022
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**

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

Based on **Google Scholar** (7/7/2024), my **h-index** is **40** and total number of **citations** is **7237** (**1872 since 2020**), with first published paper in 2002. My **top ranked paper** was published in 2007 collecting up to **1235 citations** (**Scopus h-index 30**, **citations 4263**)

Table of Contents

Education

2001-2004	Politecnico di Milano, Ph.D. in Information Technology 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

Academic positions

POLITECNICO DI MILANO, MILAN, ITALY

Dec 2014 -	Associate Professor at the Department of Electronics, Information, and Bioengineering
2006-2014	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 MIUR to support Ph.D. studies

FULL PROFESSOR QUALIFICATION

July 2023	Italian national scientific qualification in 01/B1 INF/01 scientific sector (date of achievement 21/7/2023)
July 2018	Italian national scientific qualification in 09/H1 ING-INF/05 scientific sector (date of achievement 26/7/2018)

Research interests

AREAS OF SPECIALIZATION

Design, prototype, and evaluation of resource management algorithms for Cloud/Edge/Fog, HPC systems supporting Artificial Intelligence, Big Data and Service based applications. Optimization and game theory methods applied to capacity planning and management of very large-scale data centres. Bayesian optimization and Reinforcement Learning methods for optimal configuration of HPC and computing continuum systems. Performance modelling of Artificial Intelligence and 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.

BIG DATA AND ARTIFICIAL INTELLIGENCE APPLICATIONS, EDGE COMPUTING, AND HPC

- Bayesian optimization methods for the auto-tuning of large scale and HPC systems
- Reinforcement learning solutions for next-generation Smart glasses runtime management
- Advanced scheduling policies for Deep Learning applications training in GPU based clusters. Energy-aware training
- Performance modelling of GPGPU systems through machine learning
- Optimal partitioning of Artificial Intelligence models in cloud and edge/fog systems and runtime management across computing continua
- Network architecture search of Deep Learning models with accuracy and performance trade-off
- 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 Centres

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)

Participation in research projects

EUROPEAN RESEARCH PROJECTS

2021-2024	Participation to the LIGATE EURO-HPC research project at Politecnico di Milano. Develop performance models and Bayesian optimization methods for drug discovery application optimization in HPC clusters.
2021-2023	**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 (**5mln euros** over 3 years, **1.1mln euros** allocated to my research unit). AI-SPRINT was presented by Hadea at the Web Summit 2024 in Lisbon (70,000 participants) as one of the four success stories among H2020 projects.
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 (**75k euros** over 10 months, **25k euros** allocated to my research unit)
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 (**1.5mln euros** over 2 years, **180k euros** allocated to my research unit)

2016-2018 Participated to DOSSIER-Cloud Twinning project, providing expertise on Cloud services, resource and energy management for large scale data centres and big data systems. **Proposal co-editor** (**520k euros** over 3 years, **140k euros** allocated to my research unit)

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 (**1.5mln euros** over 2 years, **240k euros** allocated to my research unit)

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 (**4mln euros** over 3 years, **530k euros** allocated to my research unit)

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, proposal co-editor** (**9mln euros** over 3 years, **780k euros** allocated to my research unit)

2008-2013 Participation in SMScom IDEAS-ERC research project at Politecnico di Milano on design of situational applications 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 PROJECTS

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

Awards

TOP 2% SCIENTIST RANKING

- Included in the World's Top 2% Scientist ranking (according to "Updated science-wide author databases of standardized citation indicators", **October 2023**, **November 2022**)

BEST PAPERS

- *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.
- A. Evangelinoua, 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.
- R. Sala, B. Guindani, *D. Ardagna*, A. Guglielmi. d-MALIBOO: a Bayesian Optimization framework for dealing with Discrete Variables. MASCOTS 2024 (32nd IEEE International Symposium on the Modeling, Analysis, and Simulation of Computer and Telecommunication Systems). 1-8. Krakow, Poland.

EUROPEAN PROJECTS

- *D. Ardagna*, F. Filippini, F. Magugliani, M. Cicala, K. K. Materka, M. Riedl, P. Skrzypek. Best project award. The ANDREAS project has been selected by the TETRAMAX Consortium in the context of the 3rd call for Value Chain Technology Transfer Projects within the H2020 TETRAMAX cascade funding, for its exceptional contribution and innovation in power and cost management of deep learning training workloads. January 2022

GOOGLE CLOUD SERVICES

- Google Cloud for Education. May 2022 (5k$)

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€)

International scientific collaborations

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 weeks 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 weeks 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 months 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

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. Application Component Placement and Resource Optimization in Computing Continua. INRIA, Grenoble, 6/3/2025
2. A DevOps approach for AI applications at the edge. Alasca talks. Online, 22/3/2024
3. I risultati del progetto H2020 AI-SPRINT. RheuMilan2023. New Frontiers of Research And Innovation in Rheumatology. Milan, 20/10/2023
4. AI-SPRINT: Open Source Tools for AI@EDGE. European Commission. EU-SW Forum. Bruxelles, 2/12/2022
5. AI-SPRINT: Future challenges of the Cognitive Cloud. European Commission. Digital Autonomy in the Computing Continuum. HORIZON-CL4-2022-DATA-01-03 call presentation. Online, 11/11/2021
6. Performance Prediction of GPU-based Deep Learning Applications. Spanish Supercomputing Network 13th Users Conference 2019, Zaragoza, Spain, 19/9/2019
7. Model Driven Development and QoS Assessment of Cloud Applications, Polytechnic University of Catalonia, Barcelona, Spain, 7/5/2014
8. Model Driven Development and QoS Assessment of Cloud Applications, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA, 15/10/2013

9. QoS Modeling and Evaluation in Cloud Environments, University of Austria at Timisoara, Timisoara, Romania, 24/9/2013
10. QoS Modeling and Evaluation in Cloud Environments, 7th Advanced Summer School in Service Oriented Computing, Crete, Greece, 4/7/2013
11. Generalized Nash Equilibria for the Service Provisioning Problem in Cloud Systems, IRISA, Rennes, France, 8/11/2012
12. Energy-Aware Autonomic Resource Allocation in Multitier Virtualized Environment (in very Large Service Centers), Imperial College, London, UK, 1/6/2012
13. A Game Theoretic Formulation of the Service Provisioning Problem in Cloud Systems, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 1/7/2011
14. A Game Theoretic Formulation of the Service Provisioning Problem in Cloud Systems, BCAM, Bilbao, Spain, 27/5/2011
15. 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
16. Green Active Management of Energy in IT systems, Karlsruhe University, Karlsruhe, Germany, 29/4/2009
17. Active Management of Energy in IT systems, Italy, Università di Modena e Reggio Emilia, Modena, Italy, 24/10/2008
18. Adaptive Service Composition in Flexible Processes, IBM T.J. Watson Research Center, Hawthorne, NY, USA, 4/5/2007
19. 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

UNDERGRADUATE TEACHING

- 2006-2017, Principles of Computer Systems (Informatica B), Politecnico di Milano
- 2008-11, Computer Science Project (Progetto Ingegneria Informatica), Politecnico di Milano
- 2003-04, Web based Information Systems (Sistemi Informativi Web), Politecnico di Milano
- 2003-2008: Information Systems Platforms (Sistemi Informativi), Politecnico di Milano

GRADUATE TEACHING

- 2016- : Algorithms and Parallel Computing, Politecnico di Milano
- 2021- : Computing Infrastructures, Politecnico di Milano
- 2023: Enabling AI at The Edge: Design, Security, Performance and Runtime Management, PhD course Politecnico di Milano
- 2019-2020: Computing 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 Computing 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, Computing continuum)

Institutional responsibilities

- Since December 2023, Politecnico di Milano Delegate for the European Open Science Cloud (EOSC) Association
- Since June 2023 member of the PhD Board for the Computer Science and Engineering Program at Politecnico di Milano
- Since September 2022 member of the European Open Ecosystem for Research and Innovation (EGI) Working Group on Artificial Intelligence
- Since July 2022 Executive Board member of the Italian Computing and Data Infrastructure (ICDI) Working Group for the Department of Electronics, Information and Bioengineering of Politecnico di Milano
- Since July 2022 member of the CINI Working Group on System and Service Quality
- Since July 2022 member of the National Research Center in High-Performance Computing, Big Data and Quantum Computing (Spoke Future HPC) for the Department of Electronics, Information and Bioengineering of Politecnico di Milano
- June 2022 – Apr 2023, member of the PhD Applications Evaluation Committee for the Computer Science and Engineering Research Area at Politecnico di Milano
- June 2021, November 2022, member of the evaluation committee for the assessment of RTD-B candidates to Associate Professor role Promotion at Politecnico di Milano
- Since 2020 member of the Research Support Group of the Computer Science Research Area of the Department of Electronics, Information and Bioengineering at Politecnico di Milano
- 2015-2018 member of IBM/POLIMI Collaborative Innovation Center on Big Data Analytics

Research supervision

MASTER, DOCTORAL STUDENTS, AND POSTDOCTORAL RESEARCHERS

- 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 (Free2move eSolutions)
- 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 (Associate Professor, Università Milano Bicocca)
- 2009-2010: Postdoctoral research advisor for Dr. Barbara Stefania Panicucci

- 2023- : Supervisor for PhD Student Roberto Sala
- 2023- : Supervisor for PhD Student Laura De Giorgi (funded by Tinvention)
- 2023- : Supervisor for PhD Student Riccardo Cavadini (co-funded by E4 Company)
- 2022- : Supervisor for PhD Student Abednego Wamuhindo Kambale (co-funded by Luxottica)
- 2021- : Supervisor for PhD Student Bruno Guindani
- 2020-2024: Supervisor for PhD Student Federica Filippini (Post-Doc Researcher, Università Milano Bicocca)
- 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
- 2001- : Advisor/Co-advisor of 110+ Master Students in Computer Science Engineering, Politecnico di Milano, Italy

HOSTED VISITING STUDENTS

- 2025: Zahra Sadat Seyedi, Amirkabir University of Technology, Iran
- 2023-2024: Lunchen Xie, Tongji University, China
- 2023: Yicheng Gao, Imperial College London, UK
- 2020: Hamta Sedghani, University of Tabriz, Iran
- 2019: Arezoo Jahani, University of Tabriz, Iran
- 2016: Ehsan Ataie, Sharif University of Technology, Iran
- 2016: Soroush Karimian-Aliabadi, Sharif University of Technology, Iran
- 2014: Marzieh Malekimajd, Sharif University of Technology, Iran

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

Organization of scientific meetings

CONFERENCE ORGANIZATION COMMITTEES

- ACM SIGMETRICS 2023 Tutorials Co-chair, Orlando, Florida, USA[1]
- IFIP WG 7.3 Performance 2021 General chair, Milan, Italy (virtual event)[2]
- IFIP WG 7.3 Performance 2020 General chair, Milan, Italy (virtual event)
- ICGreen 2015 General chair, Milan, Italy
- BPM 2008 Local organization chair, Milan, Italy

INTERNATIONAL WORKSHOPS CO-ORGANIZER AND CO-CHAIR

- Second International Workshop on FastContinuum 2025, at IEEE Services 2025
- First International Workshop on FastContinuum 2023, at ICPE 2023
- Fourth International Workshop on Scalable Deep Learning over Parallel And Distributed Infrastructures (SCADL) 2022, at IPDPS 2022
- 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 Fifth International Workshop on Scalable Deep Learning over Parallel And Distributed Infrastructures (SCADL) 2023, at IPDPS 2023
- 2017- : Steering Committee of the International Workshop On Quality-Aware Devops (QUDOS)

INTERNATIONAL CONFERENCE TECHNICAL PROGRAM COMMITTEE MEMBER (main)

- ICPE 2025
- ACM HPDC 2025-2024
- Euro-PAR 2024
- IEEE CLOUD 2021-2009
- IEEE Big Data 2016-2014, 2019-2017 Senior PC member
- IEEE/ACM CCGrid 2024-2022
- IEEE ICWS 2012- 2009
- IEEE/ACM UCC 2020- 2018
- IEEE ICDCS 2023-2022, 2017, 2012

[1] SIGMETRICS is the flagship conference of the SIGMETRICS community.
[2] Performance is the flagship conference of IFIP WG 7.3 and occurs jointly with SIGMETRICS once every three years.

- 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 2022, 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
- QoSA 2011-2009
- FiCloud 2014
- CSC 2012
- MobiWIS 2011
- CGC 2011
- SEASS 2011
- Intensive 2009
- IEEE/INFORMS SOLI 2009
- IESA 2007-2006

Commissions of trust

EVALUATION OF EUROPEAN AND NATIONAL RESEARCH PROJECTS

- Expert evaluator for Swiss National Science Foundation and Innosuisse, BRIDGE Discovery Projects (experienced researchers), 2024
- Expert evaluator for the Agency for Science, Technology and Research (A*STAR), Singapore, 2024
- External Reviewer for the European Commission, EuroHPC project OPTIMA (Optimizing Industrial Applications for Heterogeneous HPC systems), 2024
- External Reviewer for the European Commission, EuroHPC project OPTIMA (Optimizing Industrial Applications for Heterogeneous HPC systems), 2022
- External Reviewer for the European Commission, H2020 Center of Excellence project POP2 (Performance Optimisation and Productivity 2), 2022
- Member of the Netherlands Research Council for the Engineering and Applied Sciences Executive Board, 2024, 2016, 2015
- Barcelona Supercomputing Center Stars program evaluator and chair of the evaluators group, 2019
- ERC Consolidator grants expert evaluator for the European Commission, 2017
- Member of the Netherlands Organisation for Scientific Research Executive Board, 2013
- Member of the Austrian Science Fund Executive Board, 2013, 2012

EXTERNAL REFEREE ACADEMIC PROMOTION

- Committee member for the evaluation of junior Research Assistant candidates (RTD-A) at the University of Trento, 2024, 2022
- External referee for the assessment of University of Calgary applications for Promotion to Professor, 2018

ROLES WITHIN IEEE COMPUTER SOCIETY

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

ROLES WITHIN IFIP

- 2024-, IFIP Working Group 7.3 member, Computer System Modeling

ROLES WITHIN COMPUTER SCIENCE ITALIAN ASSOCIATIONS

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

EDITORIAL BOARDS

- Since October 2021, Editorial Board Member of the KeAi-Elsevier (Open Publishing Program) International Journal of Intelligent Networks
- 2018-2022 Associate Editor of the IEEE Transactions on Cloud Computing
- 2017-2020 Associate Editor 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
- 2012-2019 Editorial Board Member of the International Journal of Cloud-Computing and Super-Computing

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 Parallel and Distributed Systems
- 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 Software Engineering and Methodology
- ACM Transactions on Autonomous and Adaptive Systems
- IEEE Internet Computing
- IEEE Transactions on System Men 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

Technology transfer

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.

D. Ardagna, F. Filippini, A. W. Kambale, T. Ongarello, F. Palermo, H. Sedghani, D. Trojaniello. Processing system for executing an artificial intelligence application. Politecnico di Milano - EssilorLuxottica. Submitted to the European Patent Office.

OPEN SOURCE TOOLS, PRODUCTS AND SERVICES

2024- Consultancy services: Solutions for optimizing the communication cost of partitioned Deep Neural Network running in Smart Eyewear for EssilorLuxottica

2022- Consultancy services: Partitioning and managing AI models at runtime in computing continua for EssilorLuxottica

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/).

2023- SPACE4AI-R: System PerformAnce and Cost Evaluation on Cloud for AI applications Runtime. A novel open-source tool to support the runtime management of AI applications running on cloud-edge systems. One of the main assets of the 2020 AI-SPRINT project (https://github.com/ai-sprint-eu-project/space4ai-r-optimizer). Validated in industry use case.

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 H2020 AI-SPRINT project (https://github.com/ai-sprint-eu-project/space4ai-d). Validated in industry use case.

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. Developed within the H2020 AI-SPRINT and LIGATE research projects (https://github.com/a-MLLibrary/a-MLLibrary). Validated in industry use cases.
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 evolved into SPACE4AI-D (https://github.com/deib-polimi/diceH2020-space4cloudsWS). Validated in industry use case.
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/modaclouds-space4cloud). Validated in industry use case.
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.
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 sever 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

Full List of Publications

International Journals

1. H. Sedghani, M. Passacantando, R. Lancellotti. M. Z. Lighvan, *D. Ardagna.* A Robust Game Approach for On Spot Price Cloud Markets in Microservice-based Applications. IEEE Access. 13(1), 42178-42195. 2025 (Scimago Q1).
2. R. Sala, H. Sedghani, M. Passacantando, G. Verticale, *D. Ardagna*. AI Applications Resource Allocation in Computing Continuum: a Stackelberg Game Approach. IEEE Transactions on Cloud Computing. 13(1), 166-183. 2025. (Scimago Q1).
3. R. Sala, B. Guindani, E. Galimberti, F. Filippini, H. Sedghani, *D. Ardagna*, S. Risco, G. Moltò, M. Caballer. OSCAR-P and aMLLibrary: Profiling and Predicting the Performance of FaaS-based Applications in Computing Continua. Journal of Systems and Software. Elsevier. 221, 1-15. 2025. (Scimago Q1).
4. H. Sedghani, F. Filippini, *D. Ardagna*. SPACE4AI-D: A Design-time Tool for AI applications Resource Selection in Computing Continua. IEEE Transactions on Services Computing. 17(6), 4324-4339. 2024. (Scimago Q1).
5. B. Guindani, *D. Ardagna*, A. Guglielmi, R. Rocco, G. Palermo. Integrating Bayesian Optimization and Machine Learning for the Optimal Configuration of Cloud Systems. IEEE Transactions on Cloud Computing. 12(1), 277-294. 2024. (Scimago Q1).
6. F. Filippini, J. Anselmi, *D. Ardagna*, B. Gaujal. A Stochastic Approach for Scheduling AI Training Jobs in GPU-based Systems. IEEE Transactions on Cloud Computing. 12(1), 53-69. 2024. (Scimago Q1).
7. A. Falanti, E. Lomurno, *D. Ardagna*, M. Matteucci. POPNASv3: a Pareto-Optimal Neural Architecture Search Solution for Image and Time Series Classification. Applied Soft Computing. 145. 110555, 1-23. 2023. (Scimago Q1).
8. F. Filippini, M. Lattuada, M. Ciavotta, A. Jahani, *D. Ardagna*, E. Amaldi. A Path Relinking Method for the Joint Online Scheduling and Capacity Allocation of DL Training Workloads in GPU as a Service Systems. IEEE Transactions on Services Computing. 16(3), 1630-1646. 2023. (Scimago Q1).
9. S. Karimian-Aliabadi, M. M. Aseman-Manzar, R. Entezari-Maleki, *D. Ardagna*, B. Egger, A. Movaghar. Fixed-point Iteration Approach to Spark Scalable Performance Modeling and Evaluation. IEEE Transactions on Cloud Computing. 11(1), 897-910. 2023. (Scimago Q1).
10. E. Ataie, A. Evangelinou, E. Gianniti*, D. Ardagna*. A Hybrid Machine Learning Approach for Performance Modeling of Cloud-based Big Data Applications. The Computer Journal, Oxford Academic. 65(12), 3123-3140. 2022. (Scimago Q2).
11. M. Lattuada, E. Barbierato, E. Gianniti, *D. Ardagna*. Optimal Resource Allocation of Cloud-Based Spark Applications. IEEE Transactions on Cloud Computing. 10(2), 1301-1316. 2022. (Scimago Q1).
12. 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. 10(3), 1571-1591. 2022. (Scimago Q1).
13. H. Sedghani, M. Z. Lighvan, H. S. Aghdasi, M. Passacantando, G. Verticale, *D. Ardagna.* A Stackelberg Game approach for Managing AI Sensing Tasks in Mobile Crowdsensing. IEEE Access. 10, 91524-91544, 2022. (Scimago Q1).
14. M. Lattuada, E. Gianniti, *D. Ardagna*, L. Zhang. Performance Prediction of Deep Learning Applications Training in GPU as a Service Systems. Cluster Computing. 25, 1279-1302. 2022. (Scimago Q3).
15. H. Sedghani, *D. Ardagna*, M. Passacantando, M. Zolfy Lighvana, H. S.Aghdasi. An incentive mechanism based on a Stackelberg game for mobile crowdsensing systems with budget constraint. Ad Hoc Networks, Elsevier. 123, 1-15. 2021. (Scimago Q1).
16. *D. Ardagna*, E. Barbierato, E. Gianniti, M. Gribaudo, T.B.M. Pinto, A.P. Couto 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).

17. 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).
18. *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).
19. 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).
20. 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).
21. 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 Kozievitch, 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).
22. 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).
23. 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).
24. 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).
25. 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).
26. 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.
27. 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).
28. 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).
29. 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).
30. 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.
31. *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).
32. 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).
33. 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).

34. 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.
35. *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).
36. 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).
37. 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).
38. 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.
39. 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.
40. 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).
41. *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).
42. 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).
43. A. Koziolek, *D. Ardagna*, R. Mirandola. Hybrid Multi-Attribute QoS Optimization in Component Based Software Systems. Journal of Systems and Software. Journal of Systems and Software. Elsevier. 86(10), 2542-2558, 2013. (Scimago Q1).
44. *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).
45. *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).
46. 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).
47. *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).
48. *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).
49. 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).
50. *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.
51. *D. Ardagna*, B. Pernici. Adaptive Service Composition in Flexible Processes. IEEE Transactions on Software Engineering. 33(6), 369-384, 2007. (Scimago Q1).
52. *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).
53. *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).
54. *D. Ardagna*, B. Pernici. Dynamic Web Service Composition with QoS Constraints. International Journal of Business Process Integration and Management (IJBPIM). 1(4), 233-243, 2006. (Scimago Q3).
55. *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).
56. *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).
57. *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).
58. *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. Y. Gao, R. Sala, *D. Ardagna*, G. Casale. Deep Surrogate Models of Serverless Batch Processing Services. ESOC 2025 (11th European Conference On Service-Oriented And Cloud Computing). 155-170. Bolzano, Italy.
2. R. Cavadini, H. Sedghani, F. Filippini, *D. Ardagna*. Runtime Management of Artificial Intelligence Applications Through Hierarchical Reinforcement Learning. Valuetools 2024. 1-22. Milan, Italy. To Appear.
3. L. Barone, B. Guindani, R. Sala, *D. Ardagna*, A. Guglielmi. PAK-MAN: Enhancing Parallel Bayesian Optimization of Cloud and HPC Systems via Machine Learning. Valuetools 2024. 1-22. Milan, Italy. To Appear.
4. R. Sala, B. Guindani, *D. Ardagna*, A. Guglielmi. d-MALIBOO: a Bayesian Optimization framework for dealing with Discrete Variables. MASCOTS 2024 (32nd IEEE International Symposium on the Modeling, Analysis, and Simulation of Computer and Telecommunication Systems). 1-8. Krakow, Poland. **Best paper award**.
5. L. Xie, E. Lomurno, M. Gambella, *D. Ardagna,* M. Roveri, M. Matteucci, Q. Shi. A Lightweight Neural Architecture Search Model for Medical Image Classification. ESANN 2024 Proceedings (32th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning). 1-6. Bruges, Belgium.
6. R. Sala, F. Filippini, *D. Ardagna*, D. Lezzi, F. Lordan, P. Thiem. Greening Al: A Framework for Energy-Aware Resource Allocation of ML Training Jobs with Performance Guarantees. AINA 2024 Proceedings (The 38th International Conference on Advanced Information Networking and Applications). 110-121. Kitakyushu, Japan. 2024.
7. F. Lattari, M. Matteucci, *D. Ardagna*. AI-SPRINT: Design and Runtime Framework for Accelerating the Development of Al Applications in the Computing Continuum. AINA 2024 Proceedings (The 38th International Conference on Advanced Information Networking and Applications). 171-181. Kitakyushu, Japan. 2024.
8. B. Guindani, M. Lattuada, *D. Ardagna*. AMLLibrary: An AutoML Approach for Performance Prediction. ECMS 2023 Proceedings (The 37th ECMS International Conference on Modelling and Simulation). 241-247. Florence, Italy. 2023.
9. B. Guindani, *D. Ardagna*, A. Guglielmi. MALIBOO: When Machine Learning meets Bayesian Optimization. IEEE SmartCloud 2022 Proceedings (The 7th IEEE International Conference on Smart Cloud). 1-9. Shanghai, China. 2022.
10. A. Falanti, E. Lomurno, S. Samele, *D. Ardagna*, M. Matteucci. POPNASv2: An Efficient Multi-Objective Neural Architecture Search Technique. IEEE WCCI-IJCNN 2022 Proceedings (World Congress On Computational Intelligence, International Joint Conference on Neural Networks). 1-8. Padova, Italy. 2022.
11. H. Sedghani, F. Filippini, *D. Ardagna.* A Random Greedy based Design Time Tool for AI Applications Component Placement and Resource Selection in Computing Continua. IEEE Edge 2021 Proceedings (2021 IEEE International Conference On Edge Computing). 32-40. Guangzhou, China (online). 2021.
12. 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). Short paper. Online, 1-6. doi: 10.1109/JCC53141.2021.00022.
13. H. Sedghani, *D. Ardagna,* M. Matteucci, G. A. Fontana, G. Verticale, F. Amarilli, R. M. Badia, D. Lezzi, I. Blanquer, A. Martin, K. Wawruch. Advancing Design and Runtime Management of AI Applications with AI-SPRINT (Position Paper). COMPSAC 2021 Proceedings (IEEE 45th Annual Computers, Software, and Applications Conference). 1455-1462.
14. 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.

15. 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.
16. 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.
17. 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-).
18. E. Gianniti, L. Zhang, *D. Ardagna*. Performance Prediction of GPU-based Deep Learning Application. Closer 2019 Proceedings. 279-286. Crete, Greece.
19. 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.
20. 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.
21. 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.
22. *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.
23. 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.
24. *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***.
25. 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-).
26. 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.
27. A. Evangelinoua, 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).*
28. *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.
29. 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.
30. 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.

31. *D. Ardagna*, S. Casolari, B. Panicucci Flexible Distributed Capacity Allocation and Load Redirect Algorithms for Cloud Systems. IEEE Cloud 2011 Proceedings. 163-170. Washignton DC, USA. **Acceptance rate 18%**. (GGS A-).
32. *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++).
33. *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.
34. 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-).
35. A. Martens, *D. Ardagna*, H. Koziolek, 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.
36. *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.
37. 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).
38. 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.
39. 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.
40. 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).
41. *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.
42. *D. Ardagna*, C. Ghezzi, R. Mirandola. Model Driven QoS Analyses of Composed Web Services. Service Wave 2008 Proceedings, 299-311, Madrid, Spain, December 2008.
43. *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.
44. 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.
45. 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.
46. *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.
47. *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.
48. *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.
49. 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%**.
50. *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.

51. *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.
52. *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.
53. 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.
54. *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.
55. *D. Ardagna*, C. Francalanci, M. Trubian. A Cost-oriented Approach for Inftrastructural Design. SAC 2004 Proceedings (19th ACM Symposium on Applied Computing), 1431-1437. Nicosia, Cyprus, March 2004.
56. *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.
57. *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.

Editorial Work

1. *D. Ardagna*, E. Di Nitto, L. Blasi, F. Lordan. ICPE'23 Fast Continuum Workshop Chairs' Welcome. ICPE '23 Companion: Companion of the 2023 ACM/SPEC International Conference on Performance Engineering. April 2023.
2. D. Ardagna. Performance 2021 Foreword from the General Chair. ACM Performance Evaluation Review. 49(3), 2. December 2021.
3. D. Ardagna. Performance 2020 Foreword from the General Chair. ACM Performance Evaluation Review. 48(3), 2. December 2020.
4. *D. Ardagna*, C. Cappiello. Springer Computing. Special Issue on Sustainable Computing Systems and Applications. Springer 2017.
5. *D. Ardagna*, A. Brunnert, G. Casale, A. van Hoorn. Proceedings of the second International Workshop on Quality-Aware DevOps. ACM 2016.
6. *D. Ardagna*, A. Brunnert, G. Casale, A. van Hoorn. Proceedings of the first International Workshop on Quality-Aware DevOps. ACM 2015.
7. *D. Ardagna*, M. S. Squillante. SIGMETRICS Performance Evaluation Review Special Issue on Performance and Resource Management in Big Data Applications. ACM DL 2015.
8. *D. Ardagna*, C. Cappiello. Proceedings of Fourth International Conference on Green IT Solutions. SCITEPRESS 2015.
9. *D. Ardagna*, L. Schubert. Springer Computing. Special Issue on Cloud Computing. Springer 2015.
10. *D. Ardagna*, L. Schubert. Proceedings of the 2013 international workshop on Multi-cloud applications and federated clouds. ACM DL 2013.
11. *D. Ardagna*, L. Zhang. Run-time Models for Self-managing Systems and Applications. Springer Autonomic Computing Series 2010.
12. *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 Workshops

1. L. De Giorgi, *D. Ardagna*. Machine Learning to Predict Risk Management Applications Performance. AI4AS 2024@ACSOS2024 (2nd International Workshop on Artificial Intelligence for Autonomous computing

Systems). 1-8, September 2024.

2. F. Filippini, H. Sedghani, *D. Ardagna*. SPACE4AI-R: a Runtime Management Tool for AI Applications Component Placement and Resource Scaling in Computing Continua. DML-ICC2023@UCC2023 (3rd Workshop on Distributed Machine Learning for the Intelligent Computing Continuum). 1-7. December 2023.
3. F. Filippini, R. Cavadini, *D. Ardagna*, R. Lancellotti, G. Russo Russo, V. Cardellini, F. Lo Presti. FIGARO: reinForcement learnInG mAnagement acRoss the computing cOntinuum. DML-ICC2023@UCC2023 (3rd Workshop on Distributed Machine Learning for the Intelligent Computing Continuum). 1-8. December 2023.
4. A. W. Kambale, H. Sedghani, F. Filippini, G. Verticale, *D. Ardagna*. Runtime Management of Artificial Intelligence Applications for Smart Eyewears. DML-ICC2023@UCC2023 (3rd Workshop on Distributed Machine Learning for the Intelligent Computing Continuum). 1-8. December 2023.
5. G. Palermo, G. Accordi, D. Gadioli, E. Vitali, C. Silvano, B. Guindani, *D. Ardagna*, A. R. Beccari, D. Bonanni, C. Talarico, F. Lunghini, J. Martinovic, P. Silva, A. Bohm, J. Beranek, J. Krenek, B. Jansik, L. Crisci, B. Cosenza, P. Thoman, P. Salzmann, T. Fahringer, L. Alexander, G. Tauriello, T. Schwede, J. Durairaj, A. Emerson, F. Ficarelli, S. Wingbermuhle, E. Lindahl, D. Gregori, E. Sana, S. Coletti, P. Gschwandtner. Tunable and Portable Extreme-Scale Drug Discovery Platform at Exascale: the LIGATE Approach. Proceedings of the 20th ACM International Conference on Computing Frontiers. ACM CF2023 272-278. 2023. Bologna, Italy.
6. E. Galimberti, B. Guindani, F. Filippini, H. Sedghani, *D. Ardagna*, S. Risco, G. Moltó, M. Caballer. OSCAR-P and aMLLibrary: Performance Profiling and Prediction of Computing Continua Applications. AIPerf 2023@ICPE Workshop. (1st International Workshop for Performance Modeling, Prediction, and Control). ACM ICPE Companion Proceedings. 139-146. 2023.
7. M. Precuzzi, F. Filippini, D. Ardagna. Scheduling Deep Learning Jobs Training in the Cloud: Comparing Multiple Approaches. SPARK@ICAPS 2022 Workshop. (15th International Workshop on Scheduling and Planning Applications woRKshop). 1-9. 2022.
8. 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 clusterS. EMSICC@FiCloud 2021 Workshop Proceedings. (7th International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing). 388-393. 2021.
9. 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, Position Paper. AIM@COMPSAC 2021 Workshop Proceedings (Advances in Artificial Intelligence & Machine Learning: Applications, Challenges & Concerns). 1455-1462. 2021.
10. E. Lomurno, S. Samele, M. Matteucci, *D. Ardagna*. Pareto-Optimal Progressive Neural Architecture Search. NEvo@Work ACM Workshop on NeuroEvolution@Work 2021. GECCO (The Genetic and Evolutionary Computation Conference) Companion, 1726-1734. 2021.
11. 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.
12. E. Gianniti, *D. Ardagna*, M. Ciavotta, M. Passacantando. A Game-Theoretic Approach for Runtime Capacity Allocation in MapReduce. WACC@CCGRID 2017 Proceedings (International Workshop on Assured Cloud Computing and QoS aware Big Data). 1080-1089. Madrid, Spain.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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. Vladušič. 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.

19. *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.
20. 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.
21. 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.
22. 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.
23. 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.
24. E. Di Nitto, M. Almeida, *D. Ardagna*, G. Casale, C. Dorin Craciun, N. Ferry, V. Muntes, 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.
25. M. Miglierina, 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.
26. M. Miglierina, 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.
27. 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.
28. S. Benefico, E. Gjeci, R. Gonzalez Gomarasca, 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.
29. 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.
30. 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.
31. *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.
32. *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.
33. 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.
34. *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.

35. *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.
36. 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.
37. *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. B. Guindani, *D. Ardagna*, A. Guglielmi. Bayesian Optimization for Cloud Resource Management Through Machine Learning. Advanced Methods in Statistics, Data Science and Related Applications. SIS 2022. Springer Proceedings in Mathematics & Statistics, vol 467. Springer, Cham, 2024.
2. *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.
3. 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.
4. *D. Ardagna.* Process Optimization. Encyclopedia of Database Systems, Springer, 2008.
5. *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.
6. *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.
7. 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. B. Guindani, *D. Ardagna*, A. Guglielmi. MALIBOO: Capacity Planning through Bayesian Optimization and Machine Learning. 1st Conference on System and Service Quality (QualIITA 2022). November 2022, Milan, Italy. Extended Abstract.
2. B. Guindani, *D. Ardagna*, A. Guglielmi. Bayesian Optimization with Machine Learning for Big Data Applications in the Cloud. SIS 2022. 51st Scientific Meeting of the Italian Statistical Society. Caserta, Italy. 1-6. June 2022. Pearson. To Appear.

3. 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.
4. M. Scavuzzo, E. Di Nitto, *D. Ardagna*. Experiences and challenges in building a data intensive system for data migration. ICSE 2018, 93. May 2018.
5. M. Ciavotta, *D. Ardagna*, A. Koziolek. Palladio Optimization Suite: QoS optimization for component-based Cloud applications. Valuetools 2015. Extended Abstract. Berlin, Germany.
6. 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.
7. B. Addis, *D. Ardagna*, G. Carello, A. Capone. Energy-aware joint management of networks and Cloud infrastructures. AIRO 2015. Pisa, September 2015. Extended Abstract.
8. M. Almeida, *D. Ardagna*, N. Ferry, J.F. Peréz. Model-Driven Design of Cloud Applications with Quality-of-Service Guarantees: the MODAClouds Approach. Timisoara, September 2014. Extended Abstract.
9. 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.
10. 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.
11. 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.
12. *D. Ardagna*, M. Caldirola. Tecnologie di virtualizzazione: evoluzione in atto. AEIT, 16-21, Luglio-Agosto 2010. Invited Paper.
13. *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.
14. *D. Ardagna*, M. Giorgetta, M. Trubian. Optimum Servers Partitioning in Autonomic Computing Infrastructure. AIRO 2006. Cesena, Settembre 2006. Extended Abstract.
15. *D. Ardagna*, M. Trubian. Resource Allocation Optimization in Multi-tier Data Centers with Strict QoS Performance Guarantees. AIRO 2005. Camerino, Settembre 2005. Extended Abstract.
16. *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.
17. 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.
18. *D. Ardagna*, C. Francalanci, E. Zavarise. Internet sostituirà le attuali infrastrutture telefonica e televisiva? SMAU Ricerche. March 2002. Invited Paper.
19. *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.
20. *D. Ardagna*, C. Francalanci, M. Trubian. Cost oriented optimization of information technology (IT) infrastructures. AIRO 2002. L'Aquila, Settembre 2002. Extended Abstract.

Impact of Selected Publications

1. B. Guindani, *D. Ardagna*, A. Guglielmi, R. Rocco, G. Palermo. Integrating Bayesian Optimization and Machine Learning for the Optimal Configuration of Cloud Systems. IEEE Transactions on Cloud Computing. 12(1): 277-294. 2024. (Scimago Q1, H-Index 66, SJR2023 1.46).
   Contribution: main publication of my PhD student's work. Authorship of the idea of hybridization between Bayesian Optimization and Machine Learning. Led the research agenda.
   Impact: Attained significant improvements in the LIGEN drug discovery application by decreasing the occurrence of unfeasible simulations by approximately 50%, outperforming conventional Bayesian Optimization (BO) techniques, a widely recognized state-of-the-art auto-tuning tool, and a strategy devised by STMicroelectronics (the term"unfeasible simulations" denotes the molecular docking simulations that are insufficiently precise in evaluating drugs targeting novel viruses).

2. F. Filippini, M. Lattuada, M. Ciavotta, A. Jahani, *D. Ardagna*, E. Amaldi. A Path Relinking Method for the Joint Online Scheduling and Capacity Allocation of DL Training Workloads in GPU as a Service Systems. IEEE Transactions on Services Computing. 16(3): 1630-1646 (2023). (Scimago Q1, H-Index 87, SJR2023 2.00).
   Contribution: main publication of my PhD student's work. Led the problem definition and research agenda. Participated to the optimization problem formulation and validation.
   Impact: Reference paper of the TETRAMAX ANDREAS technology transfer project and TETRAMAX award, proposes a joint scheduler and resource allocator for deep learning jobs. Provides 95% costs savings in comparison to an IBM Research prototype.

3. 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. 10(3), 1571-1591. 2022. (Scimago Q1, H-Index 66, SJR2022 1.44).
   Contribution: main publication of my PhD student's work. Led the research agenda, the optimization problem formulation and validation.
   Impact: Applied to an industry use case, provides between 21% and 85% costs savings in comparison to a SOTA alternative method.

4. M. Lattuada, E. Barbierato, E. Gianniti, *D. Ardagna*. Optimal Resource Allocation of Cloud-Based Spark Applications. IEEE Transactions on Cloud Computing. 10(2), 1301-1316. 2022. (Scimago Q1, H-Index 66, SJR2022 1.44).
   Contribution: led the research agenda, the optimization problem formulation, the design of the heuristic method and validation.
   Impact: global optimum solution gap reduced by 30% with respect to a SOTA method by Spark inventors.

5. 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, H-Index 66, SJR2021 1.51).
   Contribution: main publication of my PhD student's work. Led the research agenda. Worked on the performance models and participated to the optimization problem formulation.
   Impact: global optimum solution gap reduced by 10-30% with respect to a SOTA method by Spark inventors.

6. *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, H-Index 66, SJR2021 1.51).

Contribution: led the research agenda and the validation activities (cloud experiments and simulation). Participated to the optimization problems receding-horizon formulation.
Impact: one of the few literature works providing a multi-time scale solution for resource management. With respect to heuristic provided by previous research works cost-savings range in 50-100%.

7. *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, H-Index 87, SJR2017 0.87).
   Contribution: led the research agenda and participated to the game formulation. Led validation activities setup.
   Impact: Extension of my work in [9] to multi-cloud scenarios (98 GoogleScholar citations).

8. 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, H-Index 100, SJR2013 0.69).
   Contribution: summary of my ten years of work on Green IT. Led the research agenda and the definition of the hierarchical multi-time scale optimization problem. Led validation activities setup.
   Impact: one of the very few literature works (112 GoogleScholar citations) implementing resource management solutions which provides both performance and availability guarantees.

9. *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, H-Index 87, SJR2013 1.00).
   Contribution: led research agenda. Participated to game model formulation. Developed the toolchain used for the validation.
   Impact: reformulation of my work in [11] as a potential game, providing a fully distributed implementation. Compared to other SOTA solutions Price of Anarchy improved by 50-70% (149 GoogleScholar citations).

10. *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, H-Index 66, SJR2012 1.27).
    Contribution: led research agenda. Participated to the optimization model formulation. Coordination of the development of the main tool used for the validation. Performed validation activities.
    Impact: one of the very first works (267 GoogleScholar citations) on energy-aware resource management of cloud data centers. Improvement on average by 45% of the solution provided by the IBM Tivoli middleware.

11. *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++).
    Contribution: led research agenda, developed the main tool used for the validation. Participated to the game model formulation.
    Impact: one of the very first works (195 GoogleScholar citations) which applied Game Theory to the management of cloud services identifying Generalized Nash Equilibria.

12. *D. Ardagna*, B. Pernici. Adaptive Service Composition in Flexible Processes. IEEE Transactions on Software Engineering. 33(6), 369-384, 2007 (top ranked paper, 1235 citations). (Scimago Q1, H-Index 188, SJR2007 1.77).

Contribution: main output of my post-doc research. Worked on the optimization problem formulation and negotiation framework setting. Toolchain development and execution of the experimental campaign.
Impact: one of the most cited literature works (1235 GoogleScholar citations) for solving Web Services composition problem with global quality of service constraints.

Milano, 7/4/2025