Luigi Portinale

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Alessandria, AL 15121 ITALY

Current position

Full Professor of Computer Science, University of Piemonte Orientale, Alessandria (Italy)

Research Interests

Artificial Intelligence; Machine and Deep Learning; Case-Based Reasoning; Probabilistic Graphical Models; Medical AI, Reliability and Dependability Theory; Decision Support Systems; Recommender Systems.

Current research issues:

Case-Based Reasoning

Advanced retrieval techniques for Big Data (e.g., Locality Sensitive Hashing); application of CBR to recommender systems and to financial decision support; AGR (Adaptation Guided Retrieval).

Probabilistic Graphical Models

Application of PGM modeling and algorithms to Reliability and Dependability: continuous time models as Continouos Time Bayesian Networks (CTBN) and extensions (GCTBN); decision models (Influence Diagrams e LIMID) for FDIR (Fault Detection Identification and Recovery) and Information Security; application of undirected models (Markov Random Fields) to recommender systems and to CBR.

Machine Learning, Data Mining e Intelligent Data Analysis

Supervised and unsupervised learning in data intensive applications; hybrid recommender systems.

Deep learning models for Big Data management and analytics (e.g. time series prediction); Multimodal deep learning and medical applications; visual search and recommendation.

EXPLAINABLE AI

Knowledge graphs, CBR, graphical models.

Appointments held

1993-1998	Assistant Professor, University of Torino (Italy)
1998-2000	Assistant Professor, University of Piemonte Orientale (Italy)
2000-2004	Associate Professor, University of Piemonte Orientale (Italy)
2004-today	Full Professor, University of Piemonte Orientale (Italy)

Education

1988	MSc in Computer Science, University of Torino (Italy)
1994	PhD in Computer Science, Universities of Torino and Milano (Italy)

Grants, honours & awards

1991	Sollac Prize for the best paper (a joint work with L. Console and D. Theseider Duprè) at the 11th International Workshop On Expert Systems and their Applications (Avignon).
2015	D.J. Groen Prize of the Safety and Reliability Group of the Institution of Mechanical Engineers (UK) for the paper "Approaching Dynamic Reliability with Predictive and Diagnostic Purposes by exploiting Dynamic Bayesian Networks", published on Journal of Risk and Reliability, 228(5), 2014 (with Daniele Codetta Raiteri).

Publications & talks

JOURNAL ARTICLES

2021j1	Payedimarri Anil Babu, Concina Diego, Portinale Luigi, Canonico Massimo, Seys Deborah, Vanhaecht Kris and Panella Massimiliano (2021), "Prediction models for public health containment measures on covid-19 using artificial intelligence and machine learning: A systematic review", *International Journal of Environmental Research and Public Health* 18(9), MDPI Publ.
2021j2	Luigi Portinale (2021), "Intelligenza Artificiale: storia, progressi e sviluppi tra speranze e timori", *MEDIA LAWS* , (3/2021).
2020j1	Cerotti Davide, Codetta Raiteri Daniele, Dondossola Giovanna, Egidi Lavinia, Franceschinis Giuliana, Portinale Luigi and Terruggia Roberta (2020),"Evidence-Based Analysis of Cyber Attacks to Security Monitored Distributed Energy Resources", *Applied Sciences* 10(14), MDPI Publ.
2018j1	Portinale Luigi (2018), "Case-Based and Multimodal Reasoning: the contribution of Piero Torasso", *INTELLIGENZA ARTIFICIALE* 12: 41-44, IOS Press.
2018j2	Codetta Raiteri Daniele and Portinale Luigi (2018), "Decision Networks for Security Risk Assessment of Critical Infrastructures", *ACM TRANSACTIONS ON INTERNET TECHNOLOGY*

18: 29-1–29-22, ACM Press.

2017j1   Portinale Luigi, Arlorio Marco, Coisson Jean Daniel, Leonardi Giorgio, Travaglia Fabiano and Locatelli Monica (2017), "Authenticity assessment and protection of high-quality Nebbiolo-based Italian wines through machine learning". *CHEMOMETRICS AND INTELLIGENT LABORATORY SYSTEMS* 171: 182–197, Elsevier.

2017j2   Codetta Raiteri Daniele and Portinale Luigi (2017), "Generalized Continuous Time Bayesian Networks as a modelling and analysis formalism for dependable systems", *RELIABILITY ENGINEERING & SYSTEM SAFETY* 167: 639–651, Elsevier.

2015j1   Bottrighi Alessio, Leonardi Giorgio, Montani Stefania, Portinale Luigi and Terenziani Paolo(2015), "A time series retrieval tool for sub-series matching", *APPLIED INTELLIGENCE* 43: 132–149, Springer.

2015j2   Codetta Raiteri Daniele and Portinale Luigi (2015), "Dynamic Bayesian Networks for Fault Detection, Identification, and Recovery in Autonomous Spacecraft", *IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS. SYSTEMS* 45: 13–24, IEEE Press

2014j1   Codetta Raiteri Daniele and Portinale Luigi (2014), "Approaching dynamic reliability with predictive and diagnostic purposes by exploiting dynamic Bayesian networks", *PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS. PART O, JOURNAL OF RISK AND RELIABILITY* 228: 488–503, Sage Pub.

2013j1   Montani Stefania, Leonardi Giorgio, Bottrighi Alessio, Portinale Luigi and Terenziani Paolo (2013), "Supporting flexible, efficient and user-interpretable retrieval of similar time series", *IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING* 25: 677–689, IEEE Press

2012j1   Codetta Raiteri Daniele, Bobbio Andrea, Montani Stefania and Portinale Luigi (2012), "A dynamic Bayesian network based framework to evaluate cascading effects in a power grid", *ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE* 25: 683–697, Elsevier.

2012j2   Codetta Raiteri Daniele, Portinale Luigi, Di Nolfo Stefano and Guiotto Andrea (2012), "ARPHA: a software prototype for fault detection, identification and recovery in autonomous spacecrafts", *ACTA FUTURA* 5: 99–110, ESA.

2010j1   Portinale Luigi, Codetta Raiteri Daniele and Montani Stefania (2010), "Supporting reliability engineers in exploiting the power of dynamic Bayesian networks", *INTERNATIONAL JOURNAL OF APPROXIMATE REASONING* 51: 179–195, Elsevier.

2009j1   Montani Stefania, Bottrighi Alessio, Leonardi Giorgio and Portinale Luigi (2009), "A CBR-based, closed loop architecture for Temporal Abstractions configuration", *COMPUTATIONAL INTELLIGENCE* 25: 235–249, Wiley-Blackwell.

2008j1   Montani Stefania, Portinale Luigi, Bobbio Andrea and Codetta Raiteri Daniele (2008), "RADYBAN: a tool for Reliability Analysis of Dynamic Fault Trees through Conversion into Dynamic Bayesian Networks", *RELIABILITY ENGINEERING & SYSTEM SAFETY* 93: 922–932, Elsevier.

2007j1   Langseth Helge and Portinale Luigi (2007), "Bayesian Networks in Reliability", *RELIABILITY ENGINEERING & SYSTEM SAFETY* 92: 92–108, Elsevier.

2006j1   Montani Stefania and Portinale Luigi (2006), "Accounting for the temporal dimension in Case-based retrieval: a framework for medical applications", *COMPUTATIONAL INTELLIGENCE* 22: 208–223, Wiley-Blackwell.

2006j2   Montani Stefania, Portinale Luigi, Leonardi Giorgio, Bellazzi Riccardo and Bellazzi Roberto (2006), "Case-based retrieval to support the treatment of end stage renal failure patients", *ARTIFICIAL INTELLIGENCE IN MEDICINE* 37: 31–42, Elsevier.

2005j1   Portinale Luigi, Montani Stefania, Bellazzi Riccardo and Leonardi Giorgio (2005), "Case Retrieval with Time-Series Features: the RHENE System", *INTELLIGENZA ARTIFICIALE* 2:

15–23, IOS Press.

2004j1   Portinale Luigi, Torasso Pietro and Magro Diego (2004), "Multi-modal Diagnosis Combining Case-Based and Model-Based Reasoning: a Formal and Experimental Analysis", *ARTIFICIAL INTELLIGENCE* 158: 109–153, Elsevier.

2003j1   Bobbio Andrea, Franceschinis Giuliana, Gaeta Rossano and Portinale Luigi (2003), "Parametric Fault-Tree for the Dependability Analysis of Redundant Systems and its High Level Petri Net Semantics", *IEEE TRANSACTIONS ON SOFTWARE ENGINEERING* 29: 270–287, IEEE Press.

2003j2   Bobbio Andrea, Ciancamerla Ester, Franceschinis Giuliana, Gaeta Rossano, Minichino Michele and Portinale Luigi (2003), "Sequential application of heterogeneous models for the safety analysis of a control system: a case study", *RELIABILITY ENGINEERING & SYSTEM SAFETY* 81: 269–280, Elsevier.

2002j1   Bellazzi Riccardo, Montani Stefania and Portinale Luigi (2002), "A fuzzy approach to case retrieval through fuzzy extensions of SQL", *ENGINEERING INTELLIGENT SYSTEMS FOR ELECTRICAL ENGINEERING AND COMMUNICATIONS* 10: 159–171, CRL Pub.

2001j1   Portinale Luigi and Torasso Pietro (2001), "Case-Based Maintenance in a Multi-Modal Reasoning System", *COMPUTATIONAL INTELLIGENCE* 17: 263–279, Wiley-Blackwell.

2001j2   Schmidt Rainer, Montani Stefania, Bellazzi Riccardo, Portinale Luigi and Gierl Lothar (2001), "Case-based reasoning for medical knowledge-based systems", *INTERNATIONAL JOURNAL OF MEDICAL INFORMATICS* 64: 355–367, Elsevier.

2001j2   Bobbio Andrea, Portinale Luigi, Minichino Michele and Ciancamerla Ester (2001), "Improving the analysis of dependable systems by mapping fault trees into Bayesian networks", *RELIABILITY ENGINEERING & SYSTEM SAFETY* 71: 249–260, Elsevier.

2000j1   Montani Stefania, Bellazzi Riccardo, Portinale Luigi and Mario Stefanelli (2000). "A multi-modal reasoning methodology for managing IDDM patients", *INTERNATIONAL JOURNAL OF MEDICAL INFORMATICS* 58: 243–256, Elsevier.

2000j2   Montani Stefania, Bellazzi Riccardo, Portinale Luigi, D'Annunzio Giuseppe, Fiocchi Stefano and Stefanelli Mario (2000), "Diabetic patients management exploiting case-based reasoning techniques", *COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE* 62:205–218, Elsevier.

1997j1   Portinale Luigi (1997), "Behavioral Petri Nets: a Model for Diagnostic Knowledge Representation and Reasoning", *IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS PART B-CYBERNETICS* 27: 184–195, IEEE Press.

1996j1   Console Luca, Portinale Luigi and Theseider Duprè Daniele (1996), "Using Compiled knowledge to guide and focus abductive diagnosis", *IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING* 8: 690–706, IEEE Press.

1995j1   Torasso Pietro, Console Luca, Portinale Luigi and Theseider Duprè Daniele (1995), "On the role of Abduction", *ACM COMPUTING SURVEYS* 27: 353-355, ACM Press.

1994j1   Console Luca, Portinale Luigi, Theseider Duprè Daniele and Torasso Pietro (1994), "Diagnosing Time-Varying Misbehavior: an Approach Based on Model Decomposition", *ANNALS OF MATHEMATICS AND OF ARTIFICIAL INTELLIGENCE* 11: 381–398, Springer.

1992j1   Portinale Luigi (1992), "Verification of Causal Models Using Petri Nets", *INTERNATIONAL JOURNAL OF INTELLIGENT SYSTEMS* 7: 715–742, Wiley.

1991j1   Console Luca, Portinale Luigi and Theseider Duprè Daniele (1991), "Focusing Abductive Diagnosis", *AI COMMUNICATIONS* 4: 88–97, IOS Press.

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Books

2015b1 Portinale Luigi and Codetta Raiteri Daniele (2015), *Modeling and Analysis of Dependable Systems: A Probabilistic Graphical Model Perspective*, World Scientific Publ., ISBN 9789814612036.

Book chapters

2022c1 Portinale Luigi (2022), "Mapping Artificial Intelligence: Perspectives from Computer Science", *Contracting and Contract Law in the Age of Artificial Intelligence*, Ebers M., Poncibò C., Zou M., Bloomsbury Publ.

2019c1 Leonardi Giorgio, Montani Stefania, Portinale Luigi, Quaglini Silvana and Striani Manuel (2019), "Discovering knowledge embedded in bio-medical databases: experiences in food characterization and in medical process mining", *Innovations in Big Data Mining and Embedded Knowledge*, Esposito A., Esposito M., Jain L.C. (eds), Intelligent Systems Reference Library 159: 117–136, Springer.

2013c1 Codetta Raiteri Daniele and Portinale Luigi (2013), "A Petri Net based tool for the analysis of Generalized Continuous Time Bayesian Networks", *Theory and Application of Multi-Formalism Modeling*, Gribaudo M., Iacono M. (eds), 118–143, IGI Global.

2013c2 Bobbio Andrea, Codetta Raiteri Daniele, Portinale Luigi, Guiotto Andrea and Yusthein Yuri (2013), "A unified modelling and operational framework for Fault Detection, Identification and Recovery in autonomous spacecrafts", *Theory and Application of Multi-Formalism Modeling*, Gribaudo M., Iacono M. (eds), 239–258, IGI Global.

2013c3 Montani Stefania, Leonardi Giorgio, Bottrighi Alessio, Portinale Luigi and Terenziani Paolo (2013), "Flexible and Efficient Retrieval of Hemodialysis Time Series", *Process Support and Knowledge Representation in Health Care*, LNAI 7738: 154–167, Springer.

2008c1 Bobbio Andrea, Codetta Raiteri Daniele, Montani Stefania and Portinale Luigi (2008), "Reliability Analysis of Systems with Dynamic Dependencies", *Bayesian Belief Networks: A Practical Guide to Applications*, Pourret O., Naim P., Marcot B.G. (eds), 225–238, Wiley.

2007c1 Langseth Helge and Portinale Luigi (2007), "Applications of Bayesian Networks in Reliability Analysis", *Bayesian Network Technologies: Applications and Graphical Models*, Mittal A., Kassim A., Tan T. (eds), 84–102, IGI Global.

2007c2 Montani Stefania, Portinale Luigi, Bellazzi Riccardo, Larizza Cristiana, Bellazzi Roberto (2007), "Assessing the Quality of Care for End Stage Renal Failure Patients by means of Artificial Intelligence Methodologies", *Advanced Computational Intelligence Paradigms in Healthcare* 1: 89–112, H. Yoshida H., Jain A., Ichalkaranje A., Jain L., Ichalkaranje N. (eds), Springer.

2005c1 Portinale Luigi, Bobbio Andrea, Montani Stefania (2005), "From Artificial Intelligence to Dependability: Modeling and Analysis' with Bayesian Networks', *Modern Statistical and Mathematical Methods in Reliability*, Wilson A., Limnios N., Keller-McNulty S., Armijo Y. (eds), Series on Quality, Reliability and Engineering Statistics 10: 365-381, World Scientific Pub.

2000c1 Montani Stefania, Bellazzi Riccardo and Portinale Luigi (2000), "Managing IDDM patients through a multi-modal reasoning methodology". *Diabetes, Nutrition & Metabolism* 13.

1998c1 Bellazzi Riccardo, Montani Stefania, Portinale Luigi, Fiocchi Stefano and Stefanelli Mario (1998), "A case-based decision support system for diabetic patients management", *Diabetes, Nutrition & Metabolism*, 11.

1997c1 Portinale Luigi and Torasso Pietro (1997), "Combining Experiential Knowledge and Model-Based Reasoning for Diagnostic Problem Solving", *Knowledge-Based Systems: Advanced Concepts, Techniques and Applications*, Tzafestas S.G. (ed), 375–397, World Scientific Publ.

1993c1 Console Luca, Portinale Luigi, Theseider Duprè Daniele and Torasso Pietro (1993), "Combining

Heuristic and Causal Reasoning in Diagnostic Problem Solving", *Second Generation Expert Systems*, David P, Krivine J.P., Simmons R. (eds), 44–68, Springer.

1992c1   Console Luca, Mossino Davide, Portinale Luigi, Theseider Duprè Daniele and Torasso Pietro (1992), "Abductive Diagnosis and its Application to a Mechanical Troubleshooting Problem", *Industrial Application of Knowledge Based Diagnosis*, Guida G., Stefanini A. (eds), 265–288, Elsevier.

1992c2   Console Luca, Casassa Mont Marco, Portinale Luigi and Torasso Pietro (1992), "Approximate Reasoning in a System Combining Prototypical Knowledge with Case-Based Reasoning", *Fuzzy Logic for the Management of Uncertainty*, Zadeh L.A., Kacprzyk J. (eds), 377–396, Wiley.

1992c3   Portinale Luigi and Console Luca (1992), "Model based diagnosis of system malfunction with Petri nets", *Robotics and Flexible Manufacturing Systems*, Tzafestas S.G., Gentina J.C. (eds), 417–426, North-Holland.

CONFERENCE PROCEEDINGS (PEER REVIEWED)

2022p1   Ciarlo Daniele and Luigi Portinale (2022), "Multimodal Deep Learning and Fast Retrieval for Recommendation", *Foundations of Intelligent Systems, Proceedings of ISMIS 2022*, LNAI:13515, Cosenza (Italy), Springer.

2021p1   Portinale Luigi and Brondolin Samuele (2021), "Clustering Users by exploiting Activity Tracks in Recommender Systems for SME", *33rd IEEE International Conference on Tools with Artificial Intelligence (ICTA21)*, virtual 1348–1352, IEEE Press.

2020p1   Karacaorenli Ayse and Portinale Luigi (2020). "Extending Fault Trees with Continuous System Variables" *30th European Safety and Reliability Conference and the 15th Probabilistic Safety Assessment and Management Conference*, Venice (Italy), 978–981, Research Publ.

2019p1   Cerotti Davide, Codetta Raiteri Daniele, Dondossola Giovanna, Egidi Lavinia, Franceschinis Giuliana, Portinale Luigi and Terruggia Roberta (2019), "A Bayesian Network Approach for the Interpretation of Cyber Attacks to Power Systems", *Third Italian Conference on Cyber Security (ITASEC 2019)*, Pisa (Italy), CEUR WORKSHOP PROCEEDINGS, vol. 2315.

2019p2   Portinale Luigi (2019), "Exploiting Markov Random Fields to Enhance Retrieval in Case-Based Reasoning", *Thirty-Second International Florida Artificial Intelligence Research Society Conference (FLAIRS19*, Sarasota (FL), 347–352, AAAI Press.

2019p3   Cerotti Davide, Codetta Raiteri Daniele, Egidi Lavinia, Franceschinis Giuliana, Portinale Luigi, Dondossola Giovanna and Terruggia Roberta (2019), "Analysis and Detection of Cyber Attack Processes targeting Smart Grids", *2019 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe)*, Bucharest (Romania).

2018p1   Luigi Portinale and Monica Locatelli (2018), "Investigating the Role of Ensemble Learning in High-Value Wine Identification", *Thirtieth Conference on Innovative Applications of Artificial Intelligence (IAAI18)*, New Orleans (LA), AAAI Press.

2017p1   Leonardi Giorgio and Portinale Luigi (2017), "Applying Machine Learning to High-Quality Wine Identification", *16-th International Conference of the Italian Association for Artificial Intelligence (AI*IA17)*, Bari (Italy), LNAI 10640: 31–43, Springer.

2016p1   Leonardi Giorgio, Portinale Luigi, Artusio Palo and Valsania Marco (2016), "A smart financial advisory system exploiting Case-Based Reasoning", *2nd International Workshop on Personalization and Recommender Systems in Financial Services (FINREC 2016)*, Bari (Italy), CEUR WORKSHOP PROCEEDINGS, 1606: 33–40.

2016p2   Leonardi Giorgio, Portinale Luigi, Artusio Paolo and Valsania Marco (2016), "Recommending Personalized Asset Investments through Case-Based Reasoning: the SMARTFASI system", *28-th*

IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2016), San Jose (CA), IEEE Press.

2015p1   Arlorio Marco, Coisson Jean Daniel, Leonardi Giorgio Locatelli Monica and Portinale Luigi (2015), "Exploiting Data Mining for Authenticity Assessment and Protection of High-Quality Italian Wines from Piedmont", *21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining*, Sydney (NSW, Australia), 1671–1680, ACM Press.

2015p2   Daniele Codetta Raiteri and Luigi Portinale (2015), "Modeling and Analysis of Dependable Systems through Generalized Continuous Time Bayesian Networks", *61st Annual Reliability and Maintainability Symposium (RAMS2015)*, Palm Harbor (FL), 45–51, IEEE Reliability Society.

2014p1   Codetta Raiteri Daniele, Portinale Luigi and Terruggia Roberta (2014), "Decision Networks for modeling and analysis of attack/defense scenarios in critical infrastructures", *27-th International Conference of the Florida Artificial Intelligence Research Society (FLAIRS 14)*, Pensacola Beach (FL), 24–27, AAAI Press.

2014p2   Codetta Raiteri Daniele, Portinale Luigi and Terruggia Roberta (2014), "Quantitative evaluation of attack/defense scenarios through Decision Network modelling and analysis", *48-th International Carnahan Conference on Security Technology (ICCST 2014)*, Rome (Italy), 432–437, IEEE Press.

2014p3   Portinale Luigi, Codetta Raiteri Daniele and Terruggia Roberta (2014), "Selecting Failure Countermeasures through Decision Network Analysis.", *60-th Annual Reliability and Maintainability Simposium (RAMS 2014)*, Colorado Springs (CO), 332–338, IEEE Reliability Society.

2013p1   Codetta Raiteri Daniele and Portinale Luigi (2013), "A GSPN based tool to inference Generalized Continuous Time Bayesian Networks", *7th International Conference on Performance Evaluation Methodologies and Tools (ValueTools 2013)*, Torino (Italy), ICST Publ.

2013p2   Codetta Raiteri Daniele and Portinale Luigi (2013). "Predictive and diagnostic analysis of an holdup tank by means of Dynamic Bayesian Network", *Advance in Risk and Reliability Technology Symposium (AR2TS)*, 296–307, Loughborough University.

2013p3   Terenziani Paolo, Bottrighi Alessio, Franceschinis Giuliana, Giordano Laura, Montani Stefania, Portinale Luigi, Theseider Duprè Daniele (2013). "Towards a Second Generation of Computer Interpretable Guidelines", *2nd International Conference on Data Technologies and Applications (DATA 2013)*, Reykjavík (IS), 199–205, Scitepress.

2012p1   Codetta Raiteri Daniele, Portinale Luigi, Di Nolfo Stefano, Guiotto Andrea and Yushtein Yuri (2012), "A unified modeling and operational framework for Fault Detection, Identification and Recovery in autonomous spacecrafts", *Workshop on Research and Use of Multiformalism Modeling Methods (WRUMMM 2012)*, London (UK), 24–31.

2012p2   Guiotto Andrea, Portinale Luigi, Codetta Raiteri Daniele and Yushtein Yuri (2012), "ARPHA: an innovative on-board FDIR reasoning engine for autonomous systems to perform diagnosis, prognosis and recovery", *International Space System Engineering Conference (DASIA 2012)*, Dubrovnik (HR), ESA.

2012p3   Codetta Raiteri Daniele, Portinale Luigi, Guiotto Andrfea and Yushtein Yuri (2012), "Evaluation of anomaly and failure scenarios involving an exploration rover: a Bayesian network approach", *International Symposium on Artificial Intelligence, Robotics and Automation in Space (iSAIRAS)*, Torino (Italy), ESA.

2012p4   Montani Stefania, Leonardi Giorgio, Bottrighi Alessio, Portinale Luigi and Terenziani Paolo (2012), "Extending a time series retrieval tool to deal with sub-series matching: an application to the hemodialysis domain", *Workshop on Case-Based Reasoning in the Health Sciences, International Conference on Case Based Reasoning (ICCBR 2012)* Lyon (France), 59–68.

2011p1   Portinale Luigi and Codetta Raiteri Daniele (2011), "ARPHA: an FDIR architecture for autonomous

spacecrafts based on Dynamic Probabilitstic Graphical Models", *IJCAI Workshop "AI in Space: Intelligence beyond planet Earth"*, Barcelona (Spain), ESA.

2011p2   Portinale Luigi and Codetta Raiteri Daniele (2011), "Using Dynamic Decision Networks and Extended Fault Trees for Autonomous Fault Detection, Identification and Recovery", *23rd IEEE Intern. Conference on Tools with Artificial Intelligence (ICTAI 11)*, Boca Raton (FL), 480–484, IEEE Press.

2010p1   Portinale Luigi and Bazzani Massimiliano (2010), "A Flexible Approach to Product Configuration exploiting Fuzzy Knowledge and SQL", *ECAI Workshop on Configuration*, Lisbon (PT), 27–32.

2010p2   Codetta Raiteri Daniele and Portinale Luigi (2010), "Generalized Continuous Time Bayesian Networks and their GSPN Semantics", *5-th European Workshop on Probabilistic Graphical Models (PGM 2010)*, Helsinki (FIN), 105–112, HIIT Pub.

2010p3   Bottrighi Alessio, Leonardi Giorgio, Montani Stefania, Portinale Luigi and Terenziani Paolo (2010), "Intelligent data interpretation and case base exploration through Temporal Abstractions", *18-th International Conference on Case-Based Reasoning (ICCBR 2010)*, Alessandria (Italy), LNAI 6167: 36–50, Springer.

2009p1   Portinale Luigi (2009), "A Fuzzy Approach to Product Configuration on Standard Databases", *11-th International Conference of the Italian Association for Artificial Intelligence (AI*IA 2009)*, Reggio Emilia (Italy), LNAI 5883: 486–495, Springer.

2009p2   Bottrighi Alessio, Leonardi Giorgio, Montani Stefania and Portinale Luigi (2009), "Extending the JColibri open source architecture for managing high-dimensional data and large case bases", *21st IEEE Int. Conference on Tools for Artificial Intelligence (ICTAI09)*, Newark (NJ), 269–275, IEEE Press.

2009p3   Portinale Luigi and Codetta Raiteri Daniele (2009), "Generalizing Continuous Time Bayesian Networks with Immediate Nodes", *IJCAI Workshop on Graph Structures for Knowledge Representation and Reasoning*, Pasadena (CA), 12–17.

2009p4   Bobbio Andrea, Codetta Raiteri Daniele, Montani Stefania and Portinale Luigi (2009), "Modeling Cascading Failure Propagation via Dynamic Bayesian Networks", *2nd IFAC Workshop on Dependable Control of Discrete Systems*, Bari (Italy), 42: 209–214, Elsevier.

2009p5   Montani Stefania, Bottrighi Alessio, Leonardi Giorgio, Portinale Luigi and Terenziani Paolo (2009), "Multi-level abstractions and multi-dimensional retrieval of cases with time series features", *17-th International Conference on Case-Based Reasoning (ICCBR 2009)*, LNAI 5650: 225–239, Springer.

2008p1   Portinale Luigi and Montani Stefania (2008), "A fuzzy logic approach to case matching and retrieval suitable to SQL implementation", *20-th IEEE International Conference on Tools for Artificial Intelligence (ICTAI 2008)*, Dayton (OH), 241–245, IEEE Press.

2008p2   Leonardi Giorgio, Bottrighi Alessio, Montani Stefania and Portinale Luigi (2008), "Semi automatic configuration of temporal abstractions of time series data using CBR", *8-th Industrial Conference on Data Mining (ICDM 2008)*, Leipzig (Germany).

2007p1   Leonardi Giorgio, Bottrighi Alessio, Montani Stefania and Portinale Luigi (2007), "Case-Based Reasoning for Temporal Abstraction Configuration in Haemodialysi", *ICCBR Workshop on CBR in the Health Sciences*, Belfast (UK).

2007p2   Portinale Luigi, Bobbio Andrea, Codetta Raiteri Daniele and Montani Stefania (2007), "Compiling Dynamic Fault Trees into Dynamic Bayesian Networks: the RADYBAN Tool", *5-th UAI Bayesian Modeling Application Workshop*, Vancouver (BC), CEUR WORKSHOP PROCEEDINGS, 268: 1613–0073.

2006p1   Portinale Luigi, Montani Stefania, Leonardi Giorgio, Bottrighi Alessio, and Juarez Josè (2006), "A case-based architecture for temporal abstraction configuration and processing", *18-th IEEE International Conference on Tools with Artificial Intelligent (ICTAI 2006)*, Arlington (VA), 667–676,

IEEE Press.

2006p2   Montani Stefania, Portinale Luigi, Bobbio Andrea, Varesio Marc and, Codetta Raiteri, Daniele (2006), "A tool for automatically translating dynamic fault trees into Dynamic Bayesian Networks", *52nd Annual Reliability and Maintainability Symposium (RAMS 2006)*, Newport Beach (CA), IEEE Reliability Engineering.

2006p3   Montani Stefania, Portinale Luigi, Bobbio Andrea and Codetta Raiteri Daniele (2006), "Automatically translating Dynamic Fault Trees into Dynamic Bayesian Networks by means of a software tool", *1st International Conference on Availability, Reliability and Security (ARES 2006)*, Vienna (Austria), 804–809, IEEE Press.

2005p1   Montani Stefania and Portinale Luigi (2005), "Case Based Representation and Retrieval with Time Dependent Feature" *6-th International Conference on Case-Based Reasoning (ICCBR 2005)*, Chicago (IL), LNCS 3620: 353–367, Springer.

2005p2   Montani Stefania, Portinale Luigi and Bobbio Andrea (2005). "Dynamic bayesian networks for modeling advanced fault tree features in dependability analysis" *European Safety and Reliability Conference (ESREL 2005)*, Tri City (Poland), 1415–1422, Balkema Publ.

2004p1   Montani Stefania, Portinale Luigi, Bellazzi Riccardo and Leonardi Giorgio (2004), "RHENE: A case retrieval system for hemodialysis cases with dynamically monitored parameters", *7th European Conference on Case-Based Reasoning (ECCBR 2004)*, Madrid (Spain), LNAI 3155: 659-672, Springer.

2003p1   Montani Stefania, Portinale Luigi, Leonardi Giorgio and Riccardo Bellazzi (2003), "Applying case-based retrieval to hemodialysis treatment" *ICCBR Workshop Case-Based Reasoning in the Health Sciences*, Trondheim (Norway).

2003p2   Bobbio Andrea, Montani Stefania and Portinale Luigi (2003), "Parametric Dependability Analysis through Probabilistic Horn Abduction", *19-th Conference on Uncertainty in Artificial Intelligence (UAI 2003)*, Acapulco (Mexico), Morgan Kaufmann.

2002p1   Portinale Luigi and Montani Stefania (2002), "A fuzzy case retrieval approach based on SQL for implementing electronic catalogs", *6-th European Conference on Case-Based Reasoning (ECCBR02)*, Aberdeen (UK), LNAI 2416: 321–335, Springer.

2002p2   Bobbio Andrea, Ciancamerla Ester, Franceschinis Giuliana, Gaeta Rossano, Minichino Michele and Portinale Luigi (2002), "Methods of Increasing Modeling Power for Safety Analysis, Applied to a Turbin Digital Control System", *21st International Conference on Computer Safety, Reliability and Security (SAFECOMP 2002)*, Catania (Italy), LNCS 2434: 212–223, Springer.

2001p1   Bobbio Andrea, Ciancamerla Ester, Franceschinis Giuliana, Gaeta Rossano, Minichino Michela and Portinale Luigi (2001), "Comparison of Methodologies for the Safety and Dependability Assessment of an Industrial Programmable Logic Controller", *International Conference ESREL 2001: European Safety and Reliability*, 411–418, Torino (Italy).

2001p2   Bobbio Andrea, Franceschinis Giuliana, Gaeta Rossano and Portinale Luigi (2001), "Dependability assessment of an industrial programmable logic controller via parametric fault-tree and high level Petri net", *9-th International Conference on Petri Nets and Performance Models - (PNPM01)*, Aachen (Germany), 29–38, IEEE Press.

2001p3   Portinale Luigi and Verrua Andrea (2001), "Exploiting Fuzzy-SQL in Case-Based Reasoning", *14-th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2001)*, Key West (FL), 103–107, AAAI Press.

2000p1   Montani Stefania, Bellazzi Riccardo, Riva Alberto, Larizza Cristiana, Portinale Luigi and Stefanelli Mario (2000), "Artificial intelligence techniques for diabetes management: the T-IDDM project", *PAIS 2000, Prestigious Applications of Intelligent Systems / European Conference on Artificial Intelligence (ECAI -PAIS)*, Berlin (Germany), 716–720, IOS Press.

2000p2   Portinale Luigi and Torasso Pietro (2000), "Automatic Case Base Management in a Multi-modal Reasoning System", *5-th European Workshop on Case-Based Reasoning (EWCBR 2000)*,Trento (Italy), LNAI 1898: 234–246, Springer.

2000p3   Montani Stefania, Bellazzi Riccardo, Portinale Luigi and Stefanelli Mario (2000), "Evaluating a multi modal reasoning system in diabetes care", *5-th European Workshop on Case-Based Reasoning (EWCBR 2000)*,Trento (Italy), LNAI 1898: 467–478, Springer.

2000p4   Montani Stefania, Bellazzi Riccardo and Portinale Luigi (2000), "Managing diabetic patients through a multi modal reasoning methodology", *Workshop "Case-Based Reasoning: a new technique for medical knowledge-based applications" at the Medical Informatics Europe (MIE'00) Conference*, Hannover (Germany).

1999p1   Portinale Luigi and Bobbio Andrea (1999), "Bayesian Networks for Dependability Analysis: an Application to Digital Control Reliability", *15-th Conference on Uncertainty in Artificial Intelligence (UAI99)*, Stockholm (Sweden), 551–558, Morgan Kaufmann.

1999p2   Bobbio Andrea, Portinale Luigi, Minichino Michele and Ciancamerla Ester (1999), "Comparing fault trees and bayesian networks for dependability analysis", *18-th Int. Conference on Computer Safety, Reliability and Security, SAFECOMP99*,Toulouse (France), LNCS 1698 310–322.

1999p3   Bobbio Andrea, Ciancamerla Ester, Minichino Michele and Portinale Luigi (1999), "Comparing Different Methodologies of Probabilistic Structured Modelling by the Analysis of Typical Industrial Dependable Systems", *CENELEC (European Committee for Electrotechnical Standardization) Workshop*, Munich (Germany).

1999p4   Portinale Luigi and Torasso Pietro (1999), "Diagnosis as a Variable Assignment Problem: a Case Study in Space Robot Fault Diagnosis", *16-th International Joint Conference on Artificial Intelligence (IJCAI 99)*, Stockholm (Sweden), 1087–1093, Morgan Kaufmann.

1999p5   Bobbio Andrea, Franceschinis Giuliana, Gaeta Rossano and Portinale Luigi (1999), "Exploiting Petri Nets to support Fault Tree based dependability analysis", *8-th International Conference on Petri Nets and Performance Models (PNPM99)*, Zaragoza (Spain), 146–155, IEEE Press.

1999p6   Montani Stefania, Bellazzi Riccardo, Riva Alberto, Portinale Luigi and Stefanelli Mario (1999), "Integrating different decision support tools in a distributed environment for diabetes management", *Hospital Without Walls conference*, 89–90.

1999p7   Bellazzi Riccardo, Montani Stefania, Portinale Luigi and Riva Alberto (1999), "Integrating rule-based and case-based decision making in diabetic patient management", *3rd International Conference on Case Based Reasoning (ICCBR 1999)*, Seeon Monastery (Germany), LNAI 1650: 386–400, Springer.

1999p8   Portinale Luigi, Torasso Pietro, Correndo Gianluca (1999), "Knowledge Representation and Reasoning for Fault Identification in a Space Robot Arm", *5-th International Symposium on Artificial Intelligence, Robotics and Automation in Space (iSAIRAS 99)*, Noordwijk (the Netherlands), 539–546, ESA.

1999p9   Montani Stefania, Bellazzi Riccardo, Portinale Luigi, Riva Alberto and Stefanelli Mario (1999), "Multi-modal reasoning in diabetic patient management", *Artificial Intelligence in Medicine and Medical Decision Making*, Aalborg (Denmark), LNAI 1620: 113–123, Springer.

1999p10   Portinale Luigi, Torasso Pietro and Tavano Paolo (1999), "Speed-up, Quality and Competence in Multi-modal Case-Based Reasoning", *3rd International Conference on Case Based Reasoning (ICCBR 1999)*, Seeon Monastery (Germany), LNAI 1650: 303–317, Springer.

1999p11   Montani Stefania, Bellazzi Riccardo, Portinale Luigi, Fiocchi Stefano, D'Annunzio Giuseppe and Stefanelli Mario (1999), "Supporting decisions in diabetic patients management through case-based retrieval", *Medical Informatics Europe Conference (MIE'99)*, Ljubljana (Slovenija) 645–649, IOS Press.

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1998p1   Montani Stefania, Bellazzi Riccardo, Portinale Luigi and Stefanelli Mario (1998), "A CBR System for Diabetic Patient Therapy", *3rd Intern. Conference on Neural Networks and Expert Systems in Medicine and Healthcare (NNESMED 98)*, Pisa (Italy), p. 160-168.

1998p2   Montani Stefania, Bellazzi Riccardo, Portinale Luigi, Fiocchi Stefano and Stefanelli Mario (1998), "A case-based retrieval system for diabetic patient therapy", *International Conference on Data Analysis in Medicine and Pharmacology (IDAMAP 98)*, Brighton (UK), World Scientific.

1998p3   Portinale Luigi, Torasso Pietro and Tavano Paolo (1998), "Dynamic Case Memory Management", *13-th European Conference on Artificial Intelligence (ECAI 98)*, Brighton (UK), 73–78, John Wiley & Sons Ltd.

1998p4   Portinale Luigi and Torasso Pietro (1998), "Performance Issues in ADAPtER a Combined CBR-MBR Diagnostic Architecture", *AAAI Spring Symposium on Multimodal Reasoning*, Stanford Univ. (CA), AAAI Press.

1998p5   Bellazzi Riccardo, Montani Stefania and Portinale Luigi (1998), "Retrieval in a prototype-based case library: a case study in diabetes therapy revision", *4-th European Workshop on Case-Based Reasoning (EWCBR 1998)*, Dublin (Ireland), LNAI 1488: 64–75, Springer.

1997p1   Portinale Luigi and Torasso Pietro (1997), "A comparative analysis of Horn models and Bayesian Networks for diagnosis", *5-th Congress of the Italian Association for Artificial Intelligence (AI*IA 97)*, Roma (Italy), LNAI 1321: 254–265, Springer.

1997p2   Portinale Luigi (1997), "Case-Based Probability Factoring in Bayesian Belief Networks", *6-th International Workshop on Artificial Intelligence and Statistics (AISTAT97)*, Ft Lauderdale (FL), 391–398.

1997p3   Portinale Luigi (1997), "Modeling and Solving Constraint Satisfaction Problems through Petri Nets", *18-th International Conference on Application and Theory of Petri Nets (ICATPN'97)*, Toulouse (France), LNCS 1248: 348–366, Springer.

1997p4   Portinale Luigi, Torasso Pietro and Magro Diego (1997), "Selecting most adaptable diagnostic solutions through Pivoting-Based Retrieval", *2nd International Conference on Case-Based Reasoning (ICCBR 1997)*, Providence (RI), LNAI 1266: 277–288, Springer.

1996p1   Portinale Luigi (1996), "Improving Model-Based Diagnosis through Algebraic Analysis: the Petri Net Challenge", *13-th National Conference on Artificial Intelligence (AAAI 96)*, Portland (OR), 952–958, AAAI Press.

1996p2   Portinale Luigi, Torasso Pietro (1996), "On the Usefulness of Re-using Diagnostic Solutions", *12-th European Conference on Artificial Intelligence (ECAI 96)*, Budapest (Hungary), 137–141, John Wiley & Sons Ltd.

1996p3   Anglano Cosimo and Portinale Luigi (1996), "Parallel Model-Based Diagnosis using PVM", *3rd European PVM Conference*, Munich (Germany), LNCS 1156: 331–334, Springer.

1995p1   Portinale Luigi and Torasso Pietro (1995), "ADAPtER, an Integrated Diagnostic System Combining Case-Based and Abductive Reasoning", *1st International Conference on Case-Based Reasoning (ICCBR 1995)*, Sesimbra (Portugal), LNAI 1010: 277–288, Springer.

1995p2   Portinale Luigi (1995), "Petri Net Reachability Analysis meets Model-Based Diagnostic Problem Solving", *IEEE Int. Conference on Systems, Man and Cybernetics (SMC 95)*, Vancouver (BC), 1712–1717, IEEE Press.

1994p1   Anglano Cosimo and Portinale Luigi (1994), "B-W Analysis: a Backward Reachability Analysis for Diagnostic Problem Solving suitable to Parallel Implementation", *15th International Conference on Applications and Theory of Petri Nets (ICATPN 94)*, Zaragoza (Spain), LNCS 815: 39–58, Springer.

1994p2   Portinale Luigi, Torasso Pietro, Giardino Antonio, Ortalda Carlo (1994), "Using Case-Based Reasoning to Focus Model-Based Diagnostic Problem Solving", *1st European Workshop on Case-Based*

Reasoning (EWCBR 93), Kaiserslautern (Germany), LNCS 837: 325–337, Springer.

1993p1   Portinale Luigi (1993), "Exploiting T-invariant analysis in Diagnostic reasoning on a Petri net model", *14-th International Conference on Applications and Theory of Petri Nets (ICATPN 93)*, Chicago (IL), LNCS 691: 339–356, Springer.

1993p2   Portinale Luigi, Torasso Pietro and Rigallo Andrea (1993), "Integrating Abductive Reasoning and Probabilistic Temporal Prediction in Diagnostic Problem Solving", *IEEE Int. Conference on Systems, Man and Cybernetics (SMC 93)*, Le Touquet (France), 725–730, IEEE Press.

1993p3   Portinale Luigi and Torasso Pietro (1993). "Selecting Observation time in the monitoring and interpretation of Time-Varying data", *3rd Congress of the Italian Association for Artificial Intelligence (AI*IA 93)*, Torino (Italy), LNAI 728: 314–325, Springer.

1992p1   Console Luca, Portinale Luigi, Theseider Dupré Daniele and Torasso Pietro (1992), "Diagnostic Reasoning across different time points", *10-th European Conference on Artificial Intelligence (ECAI 92)*, Vienna (Austria), 369–373, John Wiley & Sons.

1992p2   Portinale Luigi (1992), "Modeling Uncertain Temporal Evolutions in Model Based Diagnosis", *8-th International Conference on Uncertainty in Artificial Intelligence (UAI 92)*, Stanford Univ. (CA), 244–251, Morgan Kaufmann.

1991p1   Portinale Luigi (1991), "Generalization Handling in a Dynamic Case Memory", *6-th International Symposium on Methodologies for Intelligent Systems (ISMIS '91)*, Charlotte (NC), LNAI 542: 72–81, Springer.

1991p2   Console Luca and Portinale Luigi (1991), "Using Petri Nets in Diagnostic Reasoning", *13-th World Congress on Computation and Applied Mathematics (IMACS '91)*, Dublin (Ireland), 1400–1402, Criterion Press.

1991p3   Console Luca, Portinale Luigi and Theseider Duprè Daniele (1991), "Focusing Abductive Diagnosis", *11-th Int. Workshop on Expert Systems and their Applications (Conference on Second Generation Expert Systems)*, Avignon (France), 231–242.

Editorships

2017   Guest editor (with P. Weber) of the *Special section on "Applications of probabilistic graphical models in dependability, diagnosis and prognosis"*, Reliability Engineering & System Safety 167, Elsevier.

2008   Guest editor (with S. Montani and I. Bichindaritz) of the *Special Issue on CBR in the Health Sciences*, Applied Intelligence Journal 28(3), Springer.

2000   Volume editor (with E. Blanzieri) of *Advances in Case-Based Reasoning*, Lecture Notes in Artificial Intelligence 1898, Springer.

Invited Talks

2018ii   Portinale Luigi and Codetta Raiteri Daniele (2018) "Probabilistic Graphical Models in Reliability", *Safety of Future Systems: Science meets Industry*, Lorentz Center, Leiden (NL).

2007ii   Portinale Luigi (2007), "Dynamic Bayesian Networks as a Framework for the Reliability Analysis of Systems with Dynamic Dependencies", *5-th International Conference on Mathematical Methods in Reliability (MMR'07)*, Glasgow (UK).

2004ii   Portinale Luigi, Bobbio Andrea and Montani Stefania (2004) "From AI to dependability: using Bayesian Networks for reliability modeling and analysis", *4-th International Conference on Mathematical Methods in Reliability (MMR04)*, Santa Fe (NM).

Research Visits and Invited Seminars

1991   *MITRE Corporation* Bedford (MA);
        Georgia Tech, Atlanta (GA) (ref: A. Goel and J. Kolodner);
        MIT, Cambridge (MA) (ref: P. Szolovitz)
1994   *University of Zaragoza*, Zaragoza (Spain) (ref: B. Lacruz)
1998   *University of Pavia*, Pavia (Italy) (ref: M. Stefanelli)
2000   *IRST-ITC*, Trento (Italy) (ref: F. Ricci)
2006   *University of Murcia*, Murcia (Spain) (rcf: R. Marin and J. Juarcz)
2017   *FBK*, Trento (Italy) (ref: A. Cimatti)
2020   (now planned 2021) *Information Science Institute (ISI), University of Southern California*, (Visiting Professor), Los Angeles (CA) (ref: Prof. P. Szekely)

Tutorials

2019ti   Portinale Luigi (2019), "Introduction to Probabilistic Graphical Models", *18th International Conference of the Italian Association for Artificial Intelligence (AI*IA 2019)*, Cosenza (Italy).
2016ti   Portinale Luigi (2016), "Decision Theoretic Reliability", *62nd IEEE Annual Reliability and Maintainability Symposium, RAMS 2016*, Tucson (AZ).
2012ti   Portinale Luigi (2012), "Bayesian Belief Networks in Reliability", *58-th Annual Reliability and Maintainability Symposium, RAMS 2012*, Reno (NV).

PhD Thesis

1993   Portinale Luigi (1993), "Petri Net Models for Diagnostic Knowledge Representation and Reasoning", *University of Torino and University of Milano*.

Teaching

Undergraduate and Graduate Courses

Starting from 1993, lecturer in the following courses:
Introduction to Computer Science, Programming, Algorithms and Data Structures, Database Systems, Web Programming, Artificial Intelligence, Intelligent Decision Support Systems, Machine Learning, Statistics.

Current: *Artificial Intelligence, Intelligent Decision Support Systems, Machine Learning*

Postgraduate PhD Courses

International PhD Schools

2017   *Probabilistic Graphical Models in Intelligent Systems*, Bertinoro International Spring School 2017 BISS 2017

2019   *Introduction to Probabilistic Graphical Models*, Lake Como School of Advanced Studies, International Summer School on Advances in Artificial Intelligence

University of Torino

2011-2016   *Intelligent Decision Support Systems*

2019   *Probabilistic Graphical Models in Intelligent Systems*

Supervision of PhD Students

2001-2005   Serra Alessandro, *Improved Bayesian Network Classifiers using Feature Construction*

2019-   Karacaorenli Ayse *(thesis to be defined)*.

Projects

2019-2021   *BIOENPRO4TO: Smart Solutions for Smart Communities*, POR/FESR Funding (Circular Bioeconomics Technological Platform).

2016-2019   *INTELLITRACE: improving comprehensive artificial intelligence, validation and harmonization methods as functional bridge between untargeted analytical approaches and food tracking/authenticity within the Food Integrity field*, EU/FP7 Funding.

2014-2015   *SmartFASI: Financial Advisory Smart Services Infrastructures*, POR/FESR Funding (ICT Innovation Cluster).

2013-2015   *GINSENG: Clinical Guidelines Software Tools And Methodologies: Towards A Second Generation* (Compagnia di San Paolo Foundation).

2011-2013   *TRA.QUA.S. wine: new technologies for tracking quality and safety of high value wines from Piedmont*, POS/FESR Funding (ICT Innovation Cluster).

2010-2012   *MASP: a monitoring and control system for protected enviromental areas*, POS/FESR Funding (ICT Innovation Cluster).

2010-2011	*VERIFIM: Verification of Failure Impact by Model-checking*, European Space Agency (ESA) Funding (TEC-SWE/09-259/YY Grant).
2004-2006	*Intelligent data analysis of hemodyalisis monitoring data for improving the quality of care flow processes*, MIUR Funding.
2000-2003	*Mining Mart: Enabling End-user Datawarehouse Mining*, EU Funding (IST-11993 Grant).
2000-2002	*Models and Tools for Dependability, Safety and Performance Analysis of Highly-Critical Complex Programmable Electronic Systems*, Italian Agency for Energy and Environment (ENEA) Funding; *ISIDE: Reliable Reactive Computing Systems for Industrial Applications*, MIUR Funding.
1999-2001	*A Unified computational model for reasoning with mental models*, MIUR Funding.
1998-2000	*Intelligent Agents: interaction, reasoning and knowledge acquisition*, MIUR Funding.
1998-1999	*An intelligent system for supervising autonomous spatial robots,*: Italian Spatial Agency (ASI) Funding.

Service to the profession

ACADEMIC POSITIONS

2021-now	*Board Member* of the National Coordination Board of the PhD in Artificial Intelligence (Italy)
2019-now	*Director* of Interdepartmental Research Center on Artificial Intelligence (AI@UPO)
2015-now	*Board member* of CINI: Italian National Consortium for Computer Science
2015-2018	*Head* of the Computer Science Institute, DiSIT, UPO
2015-2018	*Member of the Department Board* of DiSIT
2012-2015	*Member of University Senate*, UPO
2011-2016	*Board member* of the PhD in Computer Science, University of Torino
2009-now	*University representative* in ICT Innovation Cluster, Piedmont Region (Italy)
2007-2011	*Chair* of the Computer Science Department, UPO
2007-2010	*Board member* of Wi-Pie Program, Piedmont Region (Italy)
2005-2012	*University representative* for the Information System, CRUI (Italy)
2005-2007	*Deputy Chair* of the Computer Science Department, UPO.

SCIENTIFIC POSITIONS

2021-now	*Editorial Board Member* of Applied Sciences, MDPI Publ
2017-now	*Associate Editor* of Network Modeling Analysis in Health Informatics and Bioinformatics (NHIB Journal) , Springer
2016	*Review Board Member* of the Dutch Research Council , the Netherlands
2014-2019	*Steering Committe Member* of Piedmont Aerospace District (CDAP), Italy
2013-2018	*Editorial Board Member* of International Journal of Quality, Statistics and Reliability, Hindawi publ.
2013-now	*Scientific Advisory Committe Member* of Istituto Tecnico Superiore (ITS) on Sustainable Mobility, Aerospace and Mechatronic, Piedmont Region (Italy)
2012-2015	*Scientific Advisory Committe Member* of EComLab: center for e-commerce studies, Italy
2010	*Review Board Member* of the French National Research Agency (ANR), France
2007-2011	*Scientific Advisory Committe Member* of CSI-Piemonte, Piedmont Region, Italy
2006-2010	*Review Board Member* of Applied Intelligence Journal, Springer.

SCIENTIFIC SOCIETIES

Member of:
Association for the Advancement of Artificial Intelligence (AAAI),
*Italian Association for Artificial Intelligence (AI*IA),*
IEEE Computer Society,
Italian Scientific Association of Biomedical Informatics (SIBIM).

PROGRAM COMMITTES

2022   Program Committe member of *30th International Conference on Case-Based Reasoning (ICCBR 22)*, (12-15 Sept, 2022), Nancy (France).

Program Committe member of the *36th AAAI Conference on Artificial Intelligence (AAAI 22)*, (22 Feb-1 March 2022), Vancouver (BC).

Program Committe member of *31th International Joint Conference on Artificial Intelligence (IJCAI-ECAI 22)*, Vienna, Austria.

Program Committe member of the *38th Intern. Conference on Uncertainty in Artificial Intelligence (UAI 22)*, (1-5 Aug, 2022), Eindhoven (The Netherlands).

Program Committe member of the *21th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2022)*, (12-15 dec, 2022) Nassau, The Bahamas.

Program Committe member of the *34rd International Conference on Tools with Artificial Intelligence (ICTAI 2022)*, (Oct 31- Nov 2, 2022, virtual).

Program Committe member of the *IEEE International Conference on Big Data (IEEE BigData 2022)*, (17-20 Dec, 2022), Osaka, Japan.

Program Committe member of the *21th International Conference of the Italian Association for Artificial Intelligence (AIxIA 22)*, (28 Nov-2 Dec, 2022), Udine, Italy.

Program Committe member of the *First AIxIA Workshop on AI and Healthcare (HC@AIxIA)*, *(Nov, 2022), Udine, Italy.*

2021   *Program Committe member of the* IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2021), *(8-11 Nov. 2021), virtual.*

Program Committe member of the 20th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2021), *(13-16 Dec 2021), virtual.*

Program Committe member of the IEEE International Conference on Big Data (IEEE BigData 2021), *(15-18 Dec, 2021), virtual.*

Program Committe member of the 33rd International Conference on Tools with Artificial Intelligence (ICTAI 2021), *(Nov 1-3, 2021, virtual).*

Senior Program Committe member of 30th International Joint Conference on Artificial Intelligence (IJCAI 21), *(Aug, 2021 - Montreal, Canada).*

Program Committe member of the 34th AAAI Conference on Artificial Intelligence (AAAI-21), *2-9 Feb 2021, Virtual*

Program Committe member of the 37th International Conference on Uncertainty in Artificial Intelligence (UAI 21), *(July, 27-30, 2021) virtual.*

Program Committe member of 29th International Conference on Case-Based Reasoning (ICCBR 21), *(Sept. 13-16, 2021- Salamanca, Spain).*

Program Committe member of Workshop on CBR in the Health Sciences (ICCBR 21), *(13-16 Sept, 2021, Salamanca, Spain).*

2020   *Program Committe member of the* International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI 2020), *Virtual (7-10 Dec. 2020);*

Program Committee member of the 32th International Conference on Tools with Artificial Intelligence (ICTAI 20), *Nov, 9-11, 2020, Baltimore (MD) (virtual).*

Program Committee member of the 10th International Conference on Probabilistic Graphical Models (PGM 2020), *23-25 Sept 2020, Aalborg (DK).*

Program Committe member of the 34th AAAI Conference on Artificial Intelligence (AAAI-20), *7-12 Nov 2020, New York (NY).*

Program Committe member of the 24th European Conference on Artificial Intelligence (ECAI 2020), *8-12 June 2020, Santiago de Compostela (Spain) (virtual).*

Program Committe member of 28th International Conference on Case-Based Reasoning (ICCBR 20), *(June 6-10, 2020- Salamanca, Spain) (virtual).*

Senior Program Committe member of 29th International Joint Conference on Artificial Intelligence - Pacific Rim Conference on Artificial Intelligence (IJCAI-PRICAI 20), *(July 11-17, 2020 - Yokohama, Japan).*

2019   *Senior Program Committe member of* 28th International Joint Conference on Artificial Intelligence (IJCAI 19), *(Aug 10-16, 2019 - Macao, China);*

Program Committe member of 27th International Conference on Case-Based Reasoning (ICCBR 19), *(Sept 8-12, 2019- Otzenhausen, Germany);*

Board member of the Doctoral Consortium at ICCBR 2019 *(Sept 8-12, 2019- Otzenhausen, Germany);*

Program Committe member of the ICCBR Workshop on CBR in the Health Sciences, *(Sept 8-12, 2019- Otzenhausen, Germany);*

Program Committe member of the International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI 2019), *Vancouver, Canada (27-30 Aug. 2019);*

Program Committe member of 31th International Conference on Tools with Artificial Intelligence (ICTAI 2019) *(Nov 4-6, 2019 - Portland, OR);*

Program Committe member of the 10th Intern. Workshop on Collaborative Agents Research & Development (CARE 2019) *(May 13-14, 2019 - Montreal, Canada);*

Program Committe member of 23rd KES International Conference on Knowledge-Based and Intelligent Information & Engineering Systems 2019 (KES2019) *(Sept 4-6, 2019 - Budapest, Hungary);*

Program Committe member of 12th International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2019) *(March 24-28, 2019 - Valencia, Spain);*

Program Committe member of the 8th International Conference on Data Analytics *(Sept 22-26,2019 - Porto, Portugal).*

2018   *Program Committe member of* 30th International Conference on Tools with Artificial Intelligence (ICTAI 2018) *(Nov 5-7, 2018 - Volos Greece);*

Program Committe member of the ECAI/IJCAI Joint Workshop on AI and Health, *Stockholm, Sweden (14-15 July, 2018);*

Program Committe member of the ICCBR Workshop on Synergies between CBR and Machine Learning, *Stockholmm Sweden (9-12 July, 2018);*

Program Committe member of the International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI 2018), *Barcelona, Spain (28-31 Aug. 2018);*

Program Committe member of Seventh International Conference on Data Analytics (DATA ANALYTICS 2018), *November 18 - 22, 2018 - Athens, Greece;*

Program Committe member of 22nd KES International Conference on Knowledge-Based and Intelligent Information & Engineering Systems 2018 (KES2018) *(Sept 3-5, 2018 - Belgrade, Serbia);*

Program Committe member of 11th International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2018) *(April 22 - 27, 2018 - Athens, Greece);*

Program Committe Member of 6th International KES Conference on Innovation in Medicine and Healthcare, *20-23 June, 2018, Gold Coast, AUS;*

Program Committe Member of 32nd AAAI Conference on Artificial Intelligence (AAAI-18), *2-7 Feb. 2018, New Orleans (LO).*

2017   *Area chair of the* 29th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2017), *(Boston, MA; Nov 6-8 2017);*

Program Committe Member of the ICCBR17 Workshop on CBR in the Health Sciences, *26-28 Jun, 2017, Trondheim, Norway;*

Program Committe member of International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI 2017), *1-3 Aug, 2017, Sydney (AUS);*

Advisory Committe member of the 25th International Conference on Case-Based Reasoning (ICCBR2017), *26-28 Jun, 2017, Trondheim, Norway;*

Program Committe member of the 31st AAAI Conference on Artificial Intelligence, *San Francisco (CA), 4-9 Feb, 2017;*

Program Committe member of the 5th KES International Conference on Innovation in Medicine and Healthcare Systems (InMed-17), *Vilamoura (Portugal), 21-23 June 2017;*

Program Committe member of 10th International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2017) *(April 22 - 27, 2017 - Venice, Italy);*

Program Committe member of the Sixth International Conference on Data Analytics (DATA ANALYTICS 2017), *Nov 12-16, 2017, Barcelona Spain.*

2016   *Program Committe member of the* Workshop on Synergies between CBR and Knowledge Dscovery at the 24th International Conference on Case-Based Reasoning (ICCBR 2016), *Atlanta, GA, 2016;*

Program Committe member for the Doctoral Consortium of the 24th International Conference on Case-Based Reasoning (ICCBR 2016), *Atlanta, GA, 2016;*

Program Committe member of the 24th International Conference on Case-Based Reasoning (ICCBR 2016), *Atlanta, GA, 2016;*

Program Committe member of the International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (HI-BI-BI 2016), *San Francisco, CA (19-20 Aug. 2016);*

Program Committe member of the 4th KES International Conference on Innovation in Medicine and Healthcare Systems, 2016 (InMed-16), *Puerto de la Cruz (Tenerife), 15-17 June 2016;*

Program Committe member of the 20th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2016), *York (UK), 5-7 Sept. 2016;*

Program Committe member of Transforming Healthcare with the Internet of Things (EFMI/STC 2016), *Special Topic Conference of the European Federation for Medical Informatics (17-19 April, 2016, Paris);*

Program Committe member of 9th International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2016) *(February 21 - 25, 2016 - Lisbon, Portugal);*

Program Committe member of 8th International Conference on Adnvances in Satellite and Space Communications (SPACOMM 2016) *(February 21 - 25, 2016 - Lisbon, Portugal).*

2015   *Invited session chair of* Applications of Probabilistic Graphical Models in Dependability, Diagnosis and Prognosis at IFAC Safeprocess 2015 *(Paris, Sept. 2-4 2015);*

Area chair of the 27th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2015), *(Salerno Italy);*

Program Committe member of the 19th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2015), *Singapore, 7-9 Sept. 2015;*

Program Committe member of the International Symposium on Network Enabled Health Infor-

matics, Biomedicine and Bioinformatics (HI-BI-BI 2015), *Paris, France (26-27 Aug. 2015);*

Program Committee member of the e-CBR Workshop:Building Cyberinfrastructure for the CBR Community at 23rd International Conference on Case-Based Reasoning (ICCBR 2015), *Frankfurt, Germany, 2015;*

Program Committee member of the Workshop on CBR in the Health Sciences at 23rd International Conference on Case-Based Reasoning (ICCBR 2015), *Frankfurt, Germany, 2015;*

Program Committee member of 23rd International Conference on Case-Based Reasoning (ICCBR 2015), *Frankfurt, Germany, 2015.*

2014   *Program Committe member of* 14th International Conference on Bioinformatics and Bioengineering (BIBE 2014), *(Nov, 10-12, 2014, Boca Raton, FL, USA);*

Program Committee member of 7th International Conference on Adnvances in Satellite and Space Communications (SPACOMM 2015), *(April 19 - 23, 2015 - Barcelona, Spain);*

Area chair of the 26th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2014), *(10-12 Nov. 2014, Limassol, Cyprus);*

Program Committee Member of 22nd International Conference on Case-Based Reasoning (IC-CBR2014), *Cork (Ireland) 29/9-1/10 2014;*

Program Committe Member of 6th International Conference on Adnvances in Satellite and Space Communications (SPACOMM 2014), *(Feb 23-27, 2014, Nice, France).*

2013   *Area Chair of the* 25th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2013), *(Nov 4-6, 2013, Washington DC, USA);*

Program Committee Member of 23rd International Joint Conference on Artificial Intelligence, IJCAI'13 *(3-9 Aug 2013, Pechino, Cina);*

Program Committee Member of 21st International Conference on Case-Based Reasoning (IC-CBR'13), *(8-11 July, 2013, Saratoga Springs, NY);*

Review Board Member of 14th World Congress on Medical and Health Informatics, MEDINFO 2013, *(20-23 Aug 2013, Copenaghen);*

Program Committe member of 5th International Conference on Adnvances in Satellite and Space Communications (SPACOMM 2013), *(Apr 23-26, 2013, Venice, Italy).*

2012   *Review Board member of* MIE 2012: XXIV Conference of the European Federation for Medical Informatics, *26-29 Aug, Pisa (Italy);*

Program Committe member of the ICCBR Workshop on Case-Based Reasoning in the Health Sciences *(Lyon, France);*

Program Committe member of 20th International Conference on Case-Based Reasoning (IC-CBR 2012); *(3-6 Sept, 2012, Lyon, France);*

Program Committe member of 4th International Conference on Adnvances in Satellite and Space Communications (SPACOMM 2012), *(Ap r29-May 4, 2012, Chamonix, France).*

2011   *Area Chair* 23th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2011), *(Nov 7-9, 2011, Boca Raton, USA);*

Program Committe member Workshop on Artificial Intelligence in Healthcare and Biomedicine (AI Health11), Conference of the Spanish Association for AI (CAEPIA 2011) *(7-11 Nov, 2011,Tenerife, Spain);*

Program Committe member 19th Intern Conf. on Case-Based reasoning (ICCBR 2011) *(12-15 Sep, 2011, Greenwich, UK);*

Program Committe member 7th IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI 2011), *(15-18 Sep, 2011, Corfu');*

Program Committee member 3rd Int. Conf. on Advances on Satellite and Space Communications (SPACOMM2011), *(17-22 Aug, 2011, Budapest).*

2010   *Area Chair* 22th IEEE Conference on Tools for Artificial Intelligence (ICTAI 2010), *(October 27-29, 2010, Arras, France)*;

Program Committee Member 18th Int. Conference on Case-Based Reasoning" (ICCBR10), *(19-22 July, 2010, Alessandria, Italy)*;

Program Committe member 19th European Conference on Artificial Intelligence (ECAI 2010), *(16-20 August 2010, Lisbon, Portugal)*;

Board of reviewers member 13th Int. Congress on Medical Informatics" (MEDINFO 2010), *(12-15 Sept. 2010, Cape Town, South Africa)*;

Program Committe Member 2nd Int. Conf. on Advances on Satellite and Space Communications (SPACOMM2010), *(13-19 June 2010, Athens, Greece)*.

2009   *Special session organizer:* Trends in Case-Based Reasoning" at IEEE/ICTAI09 *(November 2-4, 2009, Newark, NJ)*;

Program Committe Member 8th International Conference on Case-Based Reasoning (ICCBR09), *(July 20-23, 2009, Seattle, WA)*;

Program Committe Member 7th ICCBR Workshop on Case-Based Reasoning in the Health Sciences *(July 21, 2009, Seattle, WA)*;

Area Chair 21th IEEE Conference on Tools for Artificial Intelligence (ICTAI 09), *(November 2-4, 2009, Newark, NJ)*;

Program Committe Member of 1st International Conference on Advances in Satellite and Space Communications (Spacomm 2009), *(July 20-25 2009, Colmar, France)*.

2008   *Program Committee Member for the* 9th European Conference on Case-Based Reasoning (ECCBR08) *(September 1-4 2008, Trier, Germany)*;

Area Chair 20th IEEE Conference on Tools for Artificial Intelligence (ICTAI 08) *(November 3-5, 2008, Dayton USA)*;

Program Committe Member for the 18th European Conference on Artificial Intelligence (ECAI 2008) *(July 21-25 2008, Patras, Greece)*.

2007   *Program Committe Member* 7th Intern. Conf. on Reliability, Maintainability and Safety (ICRMS '07), *(22-26 Aug 2007, Bejing China)*;

Program Committe member Workshop on CBR in the Health Sciences, at ICCBR 2007, *(August 15th, 2007, Belfast, Northern Ireland)*;

Area Chair 19th IEEE Int. Conf. on Tools for Artificial Intelligence (ICTAI07) *(29-31 October, Patras, Greece)*;

Program Committe member of 12th Conference of the Spanish Association for AI (CAEPIA07), *(12-16 November, 2007, Salamanca, Spain)*;

Program Committe member of 7th International Conference on Case-Based Reasoning (ICCBR 07), *(13-16 August, 2007, Belfast, Northern Ireland)*.

2006   *Program Committe member* Workshop on CBR in the Health Sciences", at ECCBR 2006, *(September 5, 2006, Oludeniz/Fethiye, Turkey)*;

Program Committe member 8th European Conference on Case-Based Reasoning (ECCBR 06), *(September 4-7, 2006, Oludeniz/Fethiye, Turkey)*;

Program Committe member workshop on 18th Int. Conference on Tools with Artificial Intelligence (ICTAI 06) *(Nov. 13-15, 2006, Washington, USA)*;

Program Committe member Workshop on Bayesian Networks in Dependability, *co-located with the* First International Conference on Availability, Reliability and Security (ARES) *(April 20-22, 2006, Vienna, Austria)*.

2005   *Program Committe member* 11th Conference of the Spanish Association for AI (CAEPIA05)*(November 23-25, 2005, Santiago de Compostela SPAIN)*;

Program Committe member 17th Int. Conference on Tools with Artificial Intelligence (ICTAI 05), *(November 14-16, 2005, Hong Kong);*

Program Committe member 6th International Conference on Case-Based Reasoning (ICCBR05) *(August 23-26, 2005, Chicago USA).*

2004   *Program Committe member* 16th IEEE Int. Conference on Tools with Artificial Intelligence (IC-TAI 2004),*(November 15-17, 2004, Boca Raton USA);*

Program Committe member 16th European Conference on Artificial Intelligence (ECAI'04), *(Valencia, Spain, August 22-27, 2004);*

Program Committe member 7th European Conference on Case-Based Reasoning (ECCBR'04) *(Madrid, 2004).*

2003   *Program Committe member* 15th IEEE Int. Conference on Tools with Artificial Intelligence (IC-TAI 2003),*(November 3-5, 2003, Sacramento USA);*

Program Committe member Workshop "From Structured Cases to Unstructured Problem Solving Episodes" within 5th International Conference on Case-Based Reasoning (ICCBR03) *(Trondheim, Norway 23-26 June, 2003);*

Program Committe member 5th International Conference on Case-Based Reasoning (ICCBR03) *(Trondheim, Norway 23-26 June, 2003).*

2002   *Member of Data Modelling Working Group (DMWG), Knowledge and Workflow Modelling Working Group (KMWG), COST Action 282 (2002);*

Program Committe member 6th European Conference on Case-Based Reasoning (ECCBR'02) *(Aberdeen, 2002).*

2001   *Program Committe member* Fourth International Conference on Case-Based Reasoning (ICCBR'01) *(Vancouver, Canada 2001).*

2000   *Program Co-chair* 5th European Workshop on Case-Based Reasoning (EWCBR'00) *(Trento, Italy).*

1999   *Program Co-chair* Workshop on Applications of Petri Nets to Intelligent System Development *at* 20th International Conference on Application and Theory of Petri Nets *(Williamsburg, VA 21-25 June 1999).*

1998   *Program Committe member* AAAI Workshop on CBR Integrations at AAAI'98 *(Madison , WI 27 July 1998);*

Program Co-chair First Italian Workshop on Case-Based Reasoning *(Trento, Italy, 20-21 February 1998).*