

MARISTELLA MATERA
CURRICULUM VITAE ET STUDIORUM

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1. GENERAL DATA

1.1 Personal Data

<i>Birth Place and Date:</i>	<i>Andria (I) - 23 July 1968</i>
<i>Citizenship:</i>	<i>Italian</i>
<i>Degrees:</i>	<i>“Laurea” Degree in Computer Science, University of Bari, July 1994, full mark (110 out of 110) and honors (cum laude).</i> <i>Ph.D. in Computer Engineering and Automation, Polytechnic of Milan, January 2000.</i>
<i>Current Position:</i>	Since June 2002, Assistant Professor at Polytechnic of Milan, Department of Electronics and Information.

1.2 Education, Fellowships and Research Experiences

<i>September 1993:</i>	Scholarship for undergraduate students from Olivetti Ricerca S.c.p.A. , working at “Laboratorio Sanità” of Bari, Italy, on Adaptive Visual Interfaces. Maristella Matera took part to the design and development of an executive information system for the Italian Ministry of the Health.
<i>July 1994:</i>	“Laurea” degree in Computer Science , University of Bari, final grade: full marks with honors (110 out of 110 cum laude).
<i>Aug 1994 - Jan 1995:</i>	Research assistant at the Department of Computer Science, University of Bari, working on multi-paradigmatic visual query systems.
<i>Feb 1995 - Feb 1996:</i>	Fellowship from the Italian National Council of Research, working at CNUCE Institute of Pisa, Italy, on intelligent multimedia interfaces.
<i>Mar 1996 - Dec 1996:</i>	Fellowship from the University of Bari, supporting her work on the usability of multimedia applications at the GVU Center, Georgia Tech, Atlanta, US.
<i>Dec 1996 - Mar 1997:</i>	Fellowship from the Italian National Council of Research, working at the Department of Computer Science, University of Bari, Italy, on the design and evaluation of multimedia applications.
<i>May 1997 - Jan 2000:</i>	Ph.D. at Polytechnic of Milan, Department of Electronics and Information, working on a thesis titled “SUE: a Systematic Methodology for Evaluating Hypermedia Usability”.
<i>Feb 2001 - May 2002:</i>	Research assistant at Polytechnic of Milan, Department of Electronics and Information, working on the design of data-intensive Web applications.
<i>June 2002 - Present</i>	Assistant professor at Polytechnic of Milan, Department of Electronics and Information.

2. SCIENTIFIC ACTIVITIES

2.1 Research

The research of Maristella Matera focuses on theoretical, methodological and experimental aspects in the field of Web Engineering. The main research themes are shortly described in the sequel of this section. The most relevant publications describing the achieved results are highlighted. A short description of past and minor researches is also provided.

2.1.1 Web Mashups

Web mashups models and tools. This research focuses on the application of concepts typical of Web Services, such as the SOA paradigm and WSDL descriptors, to autonomous components, which are provided with a proper UI [P.40]. The aim is to define a framework for the mashup-like integration of stand-alone modules or applications, where integration occurs at the presentation layer. Hence, the final goal is to reduce the effort required for Web application development by maximizing reuse.

The design of the framework is inspired by lessons learned from application integration, appropriately modified to account for the specificity of the UI integration problem [P.24]. The research provides an *abstract component model* to specify characteristics and behaviors of presentation components, and proposes an *event-based composition model* to specify the composition logic. Components and composition are described by means of a simple XML-based language, which is interpreted by a runtime middleware for the execution of the resulting composite application. A proof-of-concept prototype [P.46] allows us to show that the proposed component model can also easily be applied to existing presentation components, built with different languages and/or component technologies. The paper [P.46], describing such prototype, won the “Best Demonstration Award” at ICWE’07.

Mashup Quality. So far, research on mashups has focused on the definition of technologies enabling mashup composition, while very little efforts have been devoted to quality concerns. We have defined an approach for mashup quality assessment, in which different quality perspectives and associated evaluation activities are integrated in the mashup life cycle, so leading to a quality-aware development process. The approach capitalizes on the characteristic feature of the mashup development, i.e., the integration of ready-to-use (possibly public) services. As in any other “assembled” system, also in mashups the quality of each single service strongly determines the quality of the final composition. Therefore, we propose an evaluation of mashup quality grounded on the assessment of each single component. The quality of integration also needs specific attention: when integrated in a mashup, services can play different roles that affect the user’s perception of the quality of the final integration, and this leads to considering the quality of the final mashup not exactly as a mere aggregation of the individual service quality; component services roles must be indeed taken into account.

This research has so far resulted into the definition of a model for the quality of mashup components [P.43]. We have also identified how the quality of single components, expressed along several quality attributes, can be used to guide the selection of services that can produce quality mashups and to assess the quality of the final mashup. We in particular propose the concept of *mashuppability*, a multi-dimension quality property that expresses the capability of some selected components to maximize the quality of the final mashup, and the concept of *final perceived quality*, i.e., the quality of the final

resulting mashup weighted according to specific roles [P.17] that the composed services play within the mashup.

Innovation-based lifecycles for mashups. Another aspect currently under investigation is related to the new perspectives on the application lifecycles introduced by Web 2.0. Web mash-ups and more in general the Web 2.0 applications are characterized by a substantial involvement of end users, which leads to fast evolution cycles that shape up the so-called *innovation life cycles*. This research therefore aims at defining new models for the application life cycle, which are able to capture the dynamics of the Web applications to come.

Mashing-up context-aware Web applications. An interesting application of the composition approach above described is the *mash-up of context-aware Web applications*, through the composition of conventional components with *context components* [P.40]. Context components monitor the context and generate some kinds of context events every time a context change occurs. Context events are thus mapped on the operations of generic components, which in turn change their state to get adapted to the new context. Provided that context components and generic components are respectively able to generate context events and react to such events, the adaptivity logic simply resides in the composition logic, which defines the synchronization of components without requiring any “ad-hoc” extension of the composition framework for the specification and implementation of adaptive behaviors. The complexity of the adaptivity design is therefore hidden, while reuse is fostered.

2.1.2 Model-based design and development of data-intensive Web applications

Modeling methods based on “Web Marts”. This research focuses on the definition of a methodology for the design of data-intensive Web applications, which is based on the adoption of the WebML conceptual model and of a suite of software tools for the model-driven automatic generation of the Web application code [P.1][P.2][P.10]. The most original concept of this research is related to the definition of new abstraction mechanisms, called Web Marts [P.31], which derive from the observation of frequently adopted Web design patterns. More specifically, the Web Marts greatly support and enhance the design of “content-accessible” Web applications [P.25]. Similarly to Data Marts, defined in the context of data warehouses, Web Marts can be considered a tool for the organization of the information published by a data-intensive Web application, and consequently of the hypertext interface for accessing this information.

The current focus of this research is on the definition of mechanisms to augment the application schemas through annotations that, based on the concepts suggested by Web Marts, make explicit the some descriptions concerning the semantics of both contents and navigation elements. The goal is to achieve the automatic generation of Web applications that are enabled to provide a more effective reading of the application contents by screen readers, which takes into account the role of contents and of navigation elements presented into Web pages.

Design and development of adaptive and context-aware Web applications. While context-awareness has been largely explored in the context of mobile applications, few proposals exist in the Web domain. This research has proposed a set of constructs that extend the WebML conceptual model to support the specification of adaptivity rules expressing context events, conditions and actions to be managed by Web applications to react to context changes. (§ Publications [P.13] [P.26] [P.86]).

The introduction of new WebML constructs has required the extension of the generative techniques that enable the automatic transformation of the WebML specification into J2EE running code. Furthermore, the page computation logic, as initially defined in the WebML framework, has been extended to interpret and execute the page adaptivity rules. It is important to notice that although the new constructs and the adopted technologies have been conceived within the WebML framework, the achieved results have a larger significance, since they suggest abstractions and mechanisms that can be applied in general for the development of adaptive multi-channel Web systems, with particular emphasis on the modeling of context and of personalization and adaptivity mechanisms [P.22].

This research has also investigated the concept of *active context-awareness* [P.21]. In the domain of the Web, where the HTTP protocol imposes a strict pull paradigm to all communications, the most common solution for adaptivity consists in adapting pages only when explicitly requested by users or by periodically refreshing pages, thus polling adaptivity. This research has especially stressed the importance of user-independent, context-triggered adaptivity actions. We have therefore complemented the model-driven approach to the design of context-aware Web applications previously described with a *context monitor*, realized thanks to RIA technologies, that operates autonomously and transparently in the background to provide suitable active support. This leads to interpreting context as “first class actor”, operating independently from users on the same hypertext the users navigate. This is the main difference of the proposed approach with respect to other interpretations of adaptive hypertexts.

Another aspect this research concentrated on is concerned with the combination of WebML and UML for the specification of adaptive Web applications. More specifically, the research has investigated the extension of the WebML methodology through the adoption of state-charts for the specification of user models and goals, which are the basis for achieving personalization mechanisms. The resulting specification framework has been in particular applied to the design of adaptive and personalized applications in the e-learning domain ([P.23], [P.27], [P.54]). The paper [P.54], describing the resulting framework, won the “Best Paper Award” at ICWE’04 (full paper acceptance rate: 13%).

The current focus of this research is on:

- The adoption of a *detached rule engine* to manage Event-Condition-Action (ECA) rules [P.17],[P.81],[P.82], which runs separately with respect to the application execution environment. With respect to the original adaptivity framework previously described, this solution offers the advantage of capturing and managing a larger set of adaptivity events and actions. Furthermore, the detached rule engine offers a more efficient management of adaptivity rules, covering issues such as rule priority and conflicts, and facilitating the maintenance and evolution of adaptivity mechanisms [P.17].
- The *mash-up of context-aware applications*, by means of the integration of conventional components with the so-called *context component*. The paper [P.40] illustrates how the integration approach introduced in [P.47] can be effectively used for the development of context-aware applications (see Section 2.1.2 for major details).

Design and development of cooperative Web applications. This research has initially investigated how conceptual models for Web applications can support the design and development of cooperative Web applications, also introducing some advantages with respect to traditional development frameworks [P.29].

More recently, within the European project COOPER [P.48], a methodology has been defined for the model-driven design of flexible cooperative processes **Error! Reference source not found.**[P.45]; this methodology has been then applied for the development of a collaborative platform supporting the so-called “project-centered learning” [P.20][P.49]. The novelty of this research is that the resulting collaborative environment enables end-users (e.g., students working in team) to define dynamic and flexible processes supporting their cooperation: at execution time, not only users can define processes, but they can also modify the processes to satisfy new requirements emerged during the collaborative work.

The proposed methodology introduces new concepts and abstractions for the modeling, creation, execution and modification of dynamic processes. The developed collaborative platform includes such abstractions and offers a Web interface that greatly facilitates process definition and modification, by means of mechanisms that guide the users in the creation of “well-formed” processes **Error! Reference source not found.**

2.1.3 Automatic tools for the evaluation of Web application quality and Web usage analysis

This research has initially focused on the definition of a quality model for WebML conceptual schemas and on the development of a software tool (Web Quality Analyzer - WQA). WQA is characterized by a modular architecture, based on the adoption of XSLT transformations that can be easily “plugged-in” to automatically analyze an XML translation of the conceptual schema with the aim of verifying quality properties, such as schema correctness and internal consistency. Several usability properties that can be analyzed at schema level are also addressed [P.87][P.88].

WQA has been successively extended for the automatic analysis of Web logs. The proposed analysis technique is based on the idea of “conceptually enriching” Web server logs, by including meta-data produced by the application runtime environment, which derive from the conceptual design of the application [P.28][P.52][P.53][P.53]. The conceptual enrichment supports enhanced analyses, because it allows one to (i) exploit the knowledge of the application structure, as deriving from the application conceptual schema, and to (ii) know exactly which data are published within the Web pages dynamically generated. Such two aspects are still uncovered by the majority of the Web usage analysis methods so far proposed.

As shown in the papers [P.11][P.12][P.14], the above mentioned advantages have been observed even when conceptual logs expressed in XML are analyzed by means of XML mining techniques. The aim of mining such logs is to identify interesting associations, which are the symptom of needs of significant user samples, and that as such can supply indications about how to improve the design of both the application contents and hypertext.

2.1.4 Past research activities

Heuristic evaluation of Hypermedia applications. In 1995, during a period spent as visiting researcher at the Graphics, Visualization and Usability Center (GVU), Georgia Institute of Technology, Atlanta, USA, and then during her Ph.D. program at Polytechnic of Milan (1996-1999), Maristella Matera worked on the definition of a new technique for the usability evaluation of Hypermedia applications [P.16][P.32][P.33][P.35][P.62][P.63][P.64]. This technique, called SUE (Systematic Usability Evaluation), is advantageous with respect to more traditional techniques, such as the Nielsen’s Heuristic Evaluation, in that it provides evaluators with a systematic guidance about how to inspect the application, looking for elements that are potential sources of usability problems.

In cooperation with the “Cognitive Psychology” group at the University of Trieste, in 2001 she also performed some controlled experiments, involving expert evaluators, to give an experimental proof of the validity of the proposed technique. [P.30][P.59]. As resulting from the literature, this experiment is one of the first (and few) attempts to validate an evaluation technique. The experimental procedural is also innovative; besides serving the purpose of validating the SUE technique, it also provides a valuable framework for the evaluation of the usability of usability evaluation methods. The paper [P.7] discusses such issue, by describing the results of a series of experiments that have been conducted to show the reliability of the proposed experimental setting.

Multimedia interfaces for databases. The Laurea (M.Sc.) thesis of Maristella Matera focused on the design of multi-paradigmatic visual interfaces for databases, and on their adaptivity based on user modeling techniques. After getting the degree, Maristella Matera was then research assistant at the Department of Computer Science, University of Bari, where she worked on visual metaphors for the interaction with databases and took part to the definition of a framework for development of multi-paradigmatic visual query systems [P.36][P.67]. At the Human-Computer Interaction Lab of the CNUCE Institute of Pisa, supported by a fellowship from the Italian Centre for National Researches, Maristella then worked for one year on the design of multimedia interfaces to databases, and defined a method for the automatic generation of effective and efficient multimedia presentations [P.34][P.66][P.67].

Formal specification of visual languages. In cooperation with the Pictorial Computing Lab (PCL) of the University of Brescia, Maristella further investigated the design of visual interfaces, concentrating on the formal specification of visual interactive systems. Through a case study, she clarified the role of formal verification and usability evaluation in the life cycle of visual interactive systems. She highlighted the way in which the two activities can be used in synergy in the different phases of the life cycle, thus leading to the development of usable visual interactive systems [P.61]. In particular, Maristella showed how, through the combination of the PCL formal model and some user-centered methods, a visual notation traditionally used by a working community (for example the community of biologists) can evolve into a Visual Interactive Language, which can be adopted as the nucleus of an interactive system supporting the tasks of the users belonging to the considered community [P.58]. The research also focused on the model-based verification of some formal properties that influence the quality of visual interactive systems, such as *liveness*, *non-determinism*, *non-ambiguity*, and *adequateness of the interaction paradigm* [P.92].

2.2 Research Projects

- 2009- : Investigator in the SeCo (Search Computing) Advanced Grant ERC.
- 2005-06: Technical Director of the Polytechnic of Milan research unit in the UE-STREP project COOPER (Collaborative Open Environment for Project-Centered Learning).
- 2003-06: Investigator in the UE-NOE Prolearn (Professional Learning).
- 2002-05: Technical Director of the database group at Polytechnic of Milan in the Italian MIUR-FIRB project MAIS (Multichannel Adaptive Information Systems).
- 1998-00: Investigator in the UE-Esprit project W3I3 - WWW Intelligent Information Infrastructure.
- 2000-01: Investigator in the UE-Esprit project FAIRWIS - Trade Fair Web-based Information Services.
- 1997-99: Investigator in the UE-Esprit project SITMOON - System of Integrated Tools for the

Creation of Multimedia Contents Delivered Off-line and ON-line.

- 1996-99: Member of the UE-Esprit Working Group SIMOS – Supporting Interactive Multimedia On-line Services.
- 1995-97: Investigator in the Italian project CORINTO – Consorzio Ricerca Nazionale Tecnologia ad Oggetti.
- 1994-98: Member of the UE-Esprit Working Group FADIVA– Foundations of Advanced 3D Information Visualizations.
- 1994-95: Investigator in the UE-Esprit project VENUS (Visual ENquiry User-oriented System).

2.3 Awards

- July 2001: Grant from the “Young Research Project” at Polytechnic of Milan, to support the research titled “Design and development of data-intensive Web applications”.
- July 2004: The paper: S. Ceri, P. Dolog, M. Matera, W. Nejdl. “Model-Driven Design of Web Applications with Client-Side Adaptation”. *Proc. of ICWE’04, Monaco, Germania, July 2004, LNCS 3140, Springer, 2004* won the “Best Paper” award (full paper acceptance rate: 13%).
- July 2007: The paper J. Yu, B. Benatallah, F. Casati, F. Daniel, M. Matera and R. Saint-Paul. “Mixup: a Development and Runtime Environment for Integration at the Presentation Layer”. *Proc. of ICWE’07, Como, July 2007, LNCS 4607, Springer, 2007* won the “Best Demonstration” award.

2.4 Invited Talks

- 2004: “Conceptual modeling of data-intensive Web applications”, Department of Computer and Systems Science, University of Rome “La Sapienza”, Italy, February 2004.
- 2001: “Interaction and Web development technologies”. Invited presentation at the ANIPLA (Italian Association for Automation) symposium on “Internet and Intranet for the Automation”, Milan, May 2001.
- 2000: “Evaluation of Hypermedia applications”, University of Bari, Italy, July 2000.
- 1999: “Inspection methods for Hypermedia applications”, University of Brescia, Italy, May 1999.
- 1995: - “Knowledge-based visualizations”, University of Rome “La Sapienza”, Italy, February 1995.
- “An approach for the design of effective data visualizations”, Department of Computer Science, University of Bari, Italy.

2.5 Tutorials

- 2003: L. Baresi, M. Matera, P. Plebani. “Models and Technologies for e-Service Composition”. ICSOC’03 (International Conference on Service Oriented Computing), Trento, Italy, December 2003.
- 1999: F. Garzotto, M. Matera, A. De Angeli. “Evaluating the Usability of Multimedia Applications (CD_ROMs and WWW Sites)”. ACM Hypertext’99, Darmstadt, Germany, February 1999.
- 1998: - M. Matera, P. Paolini. “Design and Usability Evaluation of On-line and Off-line Multimedia Applications”. MW’98 - Second International Conference on Museums and the Web, Toronto, Canada, April 1998.
- M. Matera, P. Paolini. “Model-based Evaluation of Multimedia Applications”. ACM AVI’98 (Advanced Visual Interfaces), L’Aquila, Italy, May 1998.

2.6 Chairing of Scientific Events

- Co-Chair of the Workshop QWE 2010 (Quality in Web Engineering), held in conjunction with ICWE 2010, Vienna, Austria, July 2010.
- Chair for the track "User experience: languages, models, and interfaces" at CIKM 2008 (ACM 17th Conference on Information and Knowledge Management), Napa Valley, California, October 2008.
- Co-Chair for the Workshop IWWUA'08 (Second International Workshop on Web Usability and Accessibility), held in conjunction with WISE'08, Auckland, New Zealand, September 2008.
- Publicity Chair at ICWE'07 (International Conference on Web Engineering), Como, Italy.
- Co-Chair for the Track on "Web Technologies and Applications", at ACM SAC (2003-2005).
- Co-Chair for the Workshop UMICS (International Workshop on Ubiquitous and Mobile Information Systems) held in conjunction with CAISE (2003-2004).
- Co-Chair for the Workshop AEWSE (International Workshop on Adaptation and Evolution in Web Systems Engineering), held in conjunction with ICWE (2006-2007).
- Workshop Chair at ICWE'04 (International Conference on Web Engineering), Munich, Germany.

2.7 Program committees

- COOPIS - International Conference on Cooperative Information Systems, 2004-2010.
- ICWE - International Conference on Web Engineering, 2005-2010.
- LA-Web - Latin-American Web Conference, 2005-2010.
- MoMM - Int. Conference on Advances in Mobile Computing & Multimedia, 2008-2010.
- Demo Track and Poster Track at ICWE 2008, New York, July 2008.
- ComposableWeb - International Workshop on Lightweight Composition on the Web, 2009-2010 (member of the steering committee).
- MDWE - International Workshop on Model-Driven Web Engineering, held in conjunction with ICWE, 2005-2007 and 2010.
- I-USED 2008 (International Workshop on the Interplay between Usability Evaluation and Software Development), Pisa, September 2008.
- WISM (International Workshop on Web Information Systems Modeling), held in conjunction with CAISE, 2004.
- SEBD (Italian Conference on Advanced Database Systems), 2004.
- PATPT'05 (International Workshop on Personalized Adaptive Technologies for Professional Training), held in conjunction with UM (User Modeling), 2005.
- WMM - International Workshop on Web Measurement and Metrics, held in conjunction with WWW, 2005-2006.
- UMICS - Ubiquitous and Mobile Information Systems, held in conjunction with CAISE, 2005-2007.

2.8 Memberships

- Member of WUAnet (Web Usability and Accessibility Network), an initiative of ISWE (International Society of Web Engineering).
- From 1995 to 2002 Maristella Matera was founding member and treasurer of the Italian Chapter of the ACM SIGCHI (Special Interest Group on Computer-Human Interaction).

3. PUBLICATIONS

3.1 Books

- [P.1] S. Casteleyn, F. Daniel, P. Dolog, M. Matera. "Engineering Web Applications." Series: "Data-Centric Systems and Applications", Springer, 2009, ISBN: 978-3-540-92200-1
- [P.2] S. Ceri, P. Fraternali, A. Bongio, M. Brambilla, S. Comai, M. Matera. "Progettazione di Dati e Applicazioni per il Web". McGraw-Hill, July 2003, ISBN 88-386-6138-3.
- [P.3] S. Ceri, P. Fraternali, A. Bongio, M. Brambilla, S. Comai, M. Matera. "Designing Data-Intensive Web Applications". Morgan Kaufmann Publisher, December 2002, ISBN 1-55860-843-5.

3.2 Edited books

- [P.4] S. Casteleyn, F. Daniel, P. Dolog, M. Matera, G-J Houben, O. De Troyer. "AEWSE 2007: Proceedings of the Second International Workshop on Adaptation and Evolution in Web Systems Engineering". CEUR Workshop Proceedings, Vol. 267, ISSN: 1613-0073.
- [P.5] L. Baresi, S. Dustdar, H. Gall, M. Matera. "Ubiquitous and Mobile Information and Collaboration Systems" - Proc. of UMICS'04, held in conjunction with CAISE'04, Riga, Latvia, June 2004, LNCS 3272; Springer Verlag., June 2004, ISBN: 3-540-24100-0.
- [P.6] M. Matera, S. Comai. "Engineering Web Applications". Proceedings of the ICWE'04 Workshops (selected papers). Rinton Press, December 2004, ISBN 1-58949-046-0.

3.3 Book chapters

- [P.7] M. Matera. "Visual Interaction". In *Encyclopedia of Database Systems*, L. Liu, M. Tamer Özsu (eds.), Springer Verlag, pp. 3374-3379.
- [P.8] M. Matera. "Web Mashups". In *Encyclopedia of Database Systems*, L. Liu, M. Tamer Özsu (eds.), Springer Verlag, pp. 3482-3483.
- [P.9] M. Matera, F. Rizzo, R. Cortázar, and A. Perallos. "The usability dimension in the development of Web applications". In *Handbook of Research on Web Information Systems Quality*, C. Calero, M. A. Morata, and M. Piattini (eds.), IGI Global, 2008, pp. 231-246.
- [P.10] M. Brambilla, S. Comai, P. Fraternali, M. Matera. "Designing Web Applications with WebML and Webratio". In *Web Engineering: Modelling and Implementing Web Applications*, G. Rossi, O. Pastor, D. Schwabe, and L. Olsina (eds.), Springer, ISBN: 978-1-84628-922-4, 2007, pp.221-262.
- [P.11] R. Meo, M. Matera. "Designing and Mining Web Applications: a Conceptual Modeling Approach". In: Athena Vakali and George Pallis (eds.), *Web Data Management Practices: Emerging Techniques and Technologies*. Idea Group Publ. 2006, pp. 179-198.
- [P.12] R. Meo, P.L. Lanzi, M. Matera, R. Esposito. "Integrating Web Conceptual Modeling and Web Usage Mining". In *Web Mining and Web Usage Analysis - Selected papers from WebKDD'04 (International Workshop on Web Mining and Web Usage Analysis)*, LNCS 3932, pp. 135-148.
- [P.13] M. Matera et al. "Front-end Methods and Tools for the Development of Adaptive Applications". In B. Pernici (ed.), *Mobile Information Systems. Infrastructure and Design for Flexibility and Adaptivity*. Springer Verlag, 2006, ISBN 3-540-31006-1, pp. 209-246.
- [P.14] R. Meo, P.L. Lanzi, M. Matera, D. Careggio, R. Esposito. "Employing Inductive Databases in Concrete Applications". In J.F. Boulicaut, L. de Raedt, H. Mannila (eds.) *Constraint-based Mining and Inductive Databases*. Springer-Verlag LNCS, Volume 3848, 2006, pp. 295 - 327.
- [P.15] M. Matera, F. Rizzo, G. Toffetti Carughi. "Web Usability: Principles and Evaluation Methods". In E. Mendes (ed.) *Web Engineering*, Springer Verlag, 2006, ISBN: 3-540-28196-7, pp. 143-180.
- [P.16] F. Garzotto, M. Matera, P. Paolini. "A Framework for Hypermedia Design and Usability Evaluation". In P. Jonhson, A. Sutcliffe, J. Ziegler (eds.) *Designing Effective and Usable Multimedia Systems*, Kluwer Academic Publ., 1998, Boston, ISBN 0-4112-84270-X, pp. 7-21.

3.4 International journals

- [P.17] C. Cappiello, F. Daniel, M. Matera, C. Pautasso. Information Quality in Mashups. *Internet Computing*, July 2010 (to appear).
- [P.18] S. Ceri, F. Daniel, M. Matera, A. Raffio, "Providing Flexible Process Support to Project-Centered Learning," *IEEE Transactions on Knowledge and Data Engineering*, 25 June 2008. IEEE Computer Society Digital Library. IEEE Computer Society, 2009 (pubblicato online il 15 July 2008, (<http://doi.ieeecomputersociety.org/10.1109/TKDE.2008.134>))
- [P.19] F. Daniel, M. Matera, G. Pozzi. "Managing Runtime Adaptivity through Active Rules: The Bellerofonte Framework". *Journal of Web Engineering*, 7(3), September 2008, Rinton Press, pp. 179-199.
- [P.20] H. Spoelstra, M. Matera, E. Rusman, J. van Bruggen, R. Koper. "Bridging the Gap Between Instructional Design and Double Loop Learning". *International Journal of Web-Based Learning and Teaching Technologies*. IDEA Group, February 2008.
- [P.21] S. Ceri, F. Daniel, F. Facca, M. Matera. "Model-driven Engineering of Active Context-Awareness", *WWW Journal*, Springer Verlag, Vol. 10, Number 4, December 2007, pp. 387-413.
- [P.22] M. Matera, A. Maurino, C. Batini, S. Ceri, D. Bolchini, P. Paolini. "The UM-MAIS Methodology for Multi-Channel Adaptive Web Information Systems". *WWW Journal*, Springer Verlag, Vol. 10, Number 4, December 2007, pp. 349-385.
- [P.23] P. Dolog, M. Kravcik, A. Cristea, M. Matera et al. "Authoring, Specification and Prototyping of Personalized Workplace Learning Solutions". *International Journal of Learning Technology*, Inderscience, Vol. 3, Number 3, 2007, pp. 286-308.
- [P.24] F. Daniel, J. Yu, B. Benatallah, F. Casati, M. Matera, R. Saint-Paul. "Understanding UI Integration: A survey of problems, technologies, and opportunities". *Internet Computing*, Volume 11, Number 3, May/June 2007, IEEE, pp. 59-66.
- [P.25] S. Ceri, M. Matera, F. Rizzo, V. Demaldè. "Designing Data-intensive Web Applications for Accessibility using Web Marts". *Communication of ACM*, Volume 50, Number 4, April 2007, pp. 55-61.
- [P.26] S. Ceri, F. Daniel, M. Matera, F. Facca. "Model-driven Development of Context-Aware Web Applications". *ACM Trans. on Internet Technology*, Vol. 7(1), February 2007.
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- [P.28] P. Fraternali, P. Lanzi, M. Matera, A. Maurino. "Model-driven Web Usage Analysis for the Evaluation of Web Applications Quality". *Journal of Web Engineering*, Volume 3, Number 2, October 2003, pp. 124-152.
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3.6.2 International Workshops

- [P.77] D. Barbagallo, C. Cappiello, C. Francalanci, M. Matera. "Reputation Based Self-Service Environments". ComposableWeb 2009 @ ICWE 2009, pp.12-17, San Sebastian, Spain, 2009.
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- [P.81] F. Daniel, M. Matera, A. Morandi, M. Mortari, and G. Pozzi. "Active Rules for Runtime Adaptivity Management". Proc. of the Second international workshop on Adaptation and Evolution in Web Systems Engineering (AEWSE'07), Como, Italy, July 2007, CEUR workshop proceedings, Vol. 267, ISSN: 1613-0073.
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- [P.89] S. Ceri, P. Fraternali, M. Matera, A. Maurino. "Designing multi-role, collaborative Web sites with WebML: a conference management system case study". Proc. of the IWWOST'01 Workshop - First International Workshop on Web-Oriented Software Technologies. Valencia, Spain, 18-20 June 2001, pp. 130-152.
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3.6.3 Italian conferences

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- [P.99] M.F. Costabile, M. Matera, G. Piepoli, E. Pulli. "Una Tecnica Visuale per Identificare problemi di Usabilità in Applicazioni Ipermediali". Proc. of SEBD'98 - Sistemi Evoluti per Basi di Dati - Ancona, June 1998, pp.307-322.
- [P.100] M.F. Costabile, M. Matera. "Testing Visual Features in a Database Interface". Proc. of AICA'95, Cagliari, September 1995, pp.304-309.

3.7 Thesis

- [P.101] M. Matera. "SUE: a Systematic Methodology for Evaluating Hypermedia Usability". Ph.D. Thesis, Polytechnic of Milan, January 2000.

4. TEACHING ACTIVITIES

4.1 Courses

- Since 2004: *Algorithms and Data Structures (Informatica III)* for the Computer Engineering degree, Polytechnic of Milan.
- Since 2007: *Database Project (Progetto di Basi di Dati)*, for the Computer Engineering degree, Polytechnic of Milan.
- 2002-2007: *Databases: Models and Languages* for the Telecommunication degree, Polytechnic of Milan.
- 1999-2003: *Computer Science Fundamentals* for the Management Engineering degree, Polytechnic of Milan.

4.2 Assistantships

- 1999: *New Media: Theory and Techniques*, Communication Science degree, University of Lugano, Switzerland.
- 1998-99: *Computer Science Fundamentals*, Mechanical Engineering and Computer Engineering degree, Polytechnic of Milan.
- 1997: *Human-Computer Interaction*, Computer Engineering degree, University of Lecce
- 1996: *Human-Computer Interaction*, Computer Science degree, University of Bari

4.3 Other activities

- 1997: Lectures on *Model-based design and evaluation of multimedia applications*, Master on "Multimedia and Cultural Heritage", Scuola Normale Superiore, Pisa, Italy.
- 1998-99: Lectures on *Model-based design and evaluation of multimedia applications*, "Discetech project" for the education of high school teachers, funded by Como municipality and Polytechnic of Milan.
- 2002: Lectures on *Design and development of Web applications*, master IFTS on "Multimedia Authoring", Polytechnic of Milan, Lecco Campus.