

# Pierluigi Plebani Ph.D.

## - Curriculum vitae -

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### Bio & Contacts

Pierluigi Plebani was born in Romano di Lombardia (Bg), Italy, on July 16th, 1975

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### Education

- 2002-2005 Ph.D. in Information Engineering at Politecnico di Milano. Advisor: prof. Barbara Pernici. Major topic: Searching and Invoking e-Services in Multichannel Information Systems. The related thesis wins the Chorafas award
- 2002-2004 Research associate at Dipartimento di Elettronica ed Informazione of Politecnico di Milano on "Information Systems and Workflow design", position funded by "Fondazione Silvio Tronchetti Provera"
- 2000 Laurea degree in Computer Engineering from Politecnico di Milano. Advisor: Prof. Maria Grazia Fugini.

### Employment history

- Now Assistant Professor (Ricercatore) at Dipartimento di Elettronica ed Informazione of Politecnico di Milano
- 2006-2008 Research associate at Dipartimento di Elettronica ed Informazione of Politecnico di Milano on "Searching and invocation of adaptive services in multichannel systems", position funded by FIRB-TEKNE project (from December 2006)
- 2007 Visiting researcher at Department of Computer and Information Science (IDI) of Norwegian University of Science and Technology (NTNU) Trondheim (Norway) from 07/05/2007 to 29/06/2007
- 2005-2006 Research associate at Dipartimento di Elettronica ed Informazione of Politecnico di Milano on "Advanced technologies for e-commerce", position funded by Italian government
- 2004-2005 Research associate at Dipartimento di Elettronica ed Informazione of Politecnico di Milano on "Searching and invocation of adaptive services in multichannel systems", position funded by FIRB-MAIS project
- 2004 Research internship at IBM T.J. Watson Research Center, Hawthorne (NY), USA from 19/01/2004 through 30/08/2004.

- 1996-2003 Consultant for several Italian municipalities: "Information systems upgrade, re engineering of the internal processes, definition of calls for tender".
- 2002 Consultant for Ministry on Technology Innovation (Ministero per l'Innovazione Tecnologica): "Revision support for e-government projects".
- 2001-2002 Consultant for Lombardia district: "Definition of call for tender about the realization of web portal for Education, Training and Job Posting"
- 2000-2001 Consultant for Apogeo Editore and Somedia: "E-learning platform administration"

## **Research interests**

Pierluigi Plebani's research interests are mainly focused on Web service retrieval. He is developing a tool based on UDDI, named URBE (Uddi Registry By Example), which implements matchmaking algorithms based on functional and non functional requirements. The proposed approach has been mainly adopted in frameworks which allow Web service substitutions. In particular, Web services are considered in multi-channel information systems, where the functionalities are provided through several channels and exploiting several devices (PDA, PC, Smartphone). In this scenario, Web service substitution might occur in case the Web service is no longer available, or is not reachable, or even if data provided does not satisfy a given set of constraints.

His research has also focused on data quality in cooperative information systems and the information systems security assessment.

## **Web service retrieval**

The proposed retrieval mechanisms are based on matchmaking algorithms able to evaluate the similarities among Web services [A.1, A.2, A.3, A.5, B.2, B.9, I.1, E.2, E.4, H.1]. These algorithms takes into account both the syntax to be respect to properly invoke a Web service [D.1, D.3, D.8, D.9, C.1, C.3, C.4], and the semantic aspects associated to this syntax [A.3, E.1].

## **Web service quality**

Web service retrieval also considers quality aspects and a matchmaking algorithm is proposed [B.3, B.5, D.2, D.5]. Quality offered by a Web service provider should actually not correspond to the quality really perceived by final users. Influence of networks and devices about quality of a Web service has been analyzed and a model able to capture such an influence is proposed [B.7, B.8, D.7]. In addition, starting from the work at IBM Research Labs, a run-time monitoring mechanism has been defined [B.4, B.6, D.5].

## **Data Quality in Cooperative Information Systems**

Design of an architecture for data quality management that allows the control and improvement of data quality through the analysis of organizational processes. [D.6, D.9]

## **Information systems security**

Design of methodologies and policies to ensuring distributed information systems. [B.10, B.11, C.5, G.4]

## **Research activities**

### **Conference organization**

- Program Committee member of WEBIST 2008 (4rd International Conference on Web Information Systems and Technologies)
- Program Committee member of EDOC-MWS 2007 (Middleware for Web Services workshop in conjunction with the 11th International IEEE Enterprise Distributed Object Computing Conference)
- Program Committee member of ICSOC-WESOA 2007 (Workshop on Engineering Service Oriented Applications in conjunction with the 3rd International Conference on Service Oriented Computing)
- Program Committee member of WEBIST 2007 (3rd International Conference on Web Information Systems and Technologies)
- Program Committee member of EDOC-MWS 2006 (Middleware for Web Services workshop in conjunction with the 10th International IEEE Enterprise Distributed Object Computing Conference)
- Program Committee member of VLDB-Ph.D. Workshop 2006 (in conjunction with the 32nd International Conference on Very Large Data Bases), Seoul, Korea
- Program Committee member of ICSOC-WESC 2005 (Workshop on Engineering Service Composition in conjunction with the 3rd International Conference on Service Oriented Computing), Amsterdam, The Netherlands
- Program Committee member of ICSOC-Ph.D. Symposium 2005 (in conjunction with the 3rd International Conference on Service Oriented Computing ), Amsterdam, The Netherlands
- Program Committee member of EDOC-MWS 2005 (Middleware for Web Services workshop in conjunction with the 9th International IEEE Enterprise Distributed Object Computing Conference), Enschede, The Netherlands
- Program Committee member of SEBD 2005 (Sistemi Evoluti per Basi di Dati), Bressanone-Brixen, Italy
- Program Committee member of SEBD 2005 (Sistemi Evoluti per Basi di Dati), Bressanone-Brixen, Italy
- Program Committee member of IRMA 2005 (International Resource Management Association Conference), San Diego, CA, USA
- Registration Chair of SAINT 2005 (IEEE/IPSJ Symposium on Applications and the Internet), Trento, Italy

### **Conference participation**

- Intl. Conference on Advanced Information Systems Engineering (CAiSE) 2008
- Intl. Conference on Service Oriented Computing (IC-SOC) 2007
- Intl. Conference on Advanced Information Systems Engineering (CAiSE) 2007
- Intl. Conference on Service Oriented Computing (IC-SOC) 2006
- Intl. Conference on Service Oriented Computing (IC-SOC) 2005

- Intl. Conference on Service Oriented Computing (IC-SOC) 2004
- Intl. Conference on World Wide Web, WWW 2004
- Intl. Conference on Advanced Information Systems Engineering (CAiSE) 2003
- Intl. Conference on Service Oriented Computing (IC-SOC) 2003
- IRMA Intl. Conference 2002

### **International Conference Reviewer**

- Int. Conference on Service Oriented Computing (IC-SOC)
- Int. Conference on World Wide Web (WWW)
- Int. Conference on Advanced Information Systems Engineering (CAiSE)
- Int. Conference on Web Engineering (ICWE)
- IEEE Int. Conference on Web Services (ICWS)
- IEEE European Conference on Web Services (ECOWS)
- Int. Conference on Web Information System Engineering (WISE)
- ACM SIG Symposium On Applied Computing (SAC)
- IFIP TC8 Working Conference on Mobile Information Systems (MOBIS)
- IEEE Int. Conference on Next Generation Web Services Practices (NWeSP)

### **International Journal Reviewer**

- VLDB Journal
- IBM System Journal
- ACM Transaction on Internet Technology
- The International Journal on Business Process Integration and Management, Inderscience Information Systems, Elsevier

### **Tutorial, Panel & Lectures**

- Lecture on "Quality of Web services" at Ph.D. Summer School, Certosa di Collegno, Torino, August-September, 2006
- Panel on "Quality of Service (QoS) Middleware for Web Services: Achieved Results and Challenges for the Future" at EDOC-MWS 2005 (Middleware for Web Services workshop in conjunction with the 9th International IEEE Enterprise Distributed Object Computing Conference)
- L. Baresi, M. Matera, and P. Plebani (Politecnico di Milano - Italy) Models and Technologies for Service Composition (issues and solutions). Presented at the 1st International Conference on Service-oriented Computing (ICSOC 2003). November, 2003, Trento, Italy.

## **Publications**

### **International journals**

- [A.1] P. Plebani, B. Pernici, "URBE: Web service Retrieval based on Similarity Evaluation", to appear on IEEE Transaction on Knowledge and Data Engineering
- [A.2] D. Ardagna, M. Comuzzi, E. Mussi, B. Pernici, P. Plebani, PAWS: A Framework for Executing Adaptive Web-Service Processes. IEEE Software. Volume 24, Issue 6, Pages 39-46, November/December 2007
- [A.3] V. De Antonellis, M. Melchiori, L. De Santis, M. Mecella, E. Mussi, B. Pernici, P. Plebani, "A layered architecture for flexible e-service invocation", Software & Practice Experience, pp. 191-223, 36 (2), February 2006, John Wiley & Sons.
- [A.4] D. Bianchini, V. De Antonellis, B. Pernici, P. Plebani, "Ontology-based methodology for e-Service discovery", Journal of Information Systems, Vol. 31, No. 4-5. (2006), pp. 361-380, Elsevier Science.
- [A.5] E. Colombo, V. De Antonellis, C. Francalanci, M. Mecella, M. Melchiori, B. Pernici, P. Plebani, "Cooperative Information Systems in Virtual Districts: the VISPO Approach", IEEE Bulletin on Data Engineering, 25(4), pp. 36-40, December 2002, on-line edition.

### **International conferences**

- [B.1] M. Comuzzi, K. Kritikos, P. Plebani, "Semantic-aware Service Quality Negotiation", in Proceedings of First European Conference, ServiceWave 2008, LNCS 5377, Madrid, Spain, December 10-13, 2008.
- [B.2] L. Baresi, M. Miraz, P. Plebani, "A Flexible and Semantic-aware Publication Infrastructure for Web services", in Proceedings of International Conference on Advanced Information Systems Engineering (CAiSE'08), Montpellier, France, June 2008.
- [B.3] C. Cappiello, M. Comuzzi, P. Plebani, "On Automated Generation of Web Service Level Agreements", In proceedings of International Conference on Advanced Information Systems Engineering (CAiSE'07), Trondheim , Norway, June 2007.
- [B.4] L. Baresi, S. Guinea, P. Plebani, "Policies and Aspects for the Supervision of BPEL Processes", in Proceedings of International Conference on Advanced Information Systems Engineering (CAiSE'07), Trondheim, Norway, June 2007.
- [B.5] M.G. Fugini, P. Plebani, and F. Ramoni, "A user driven policy selection model", In Proceedings of the Fourth International Conference on Service Oriented Computing (ICSOC2006), Short Paper, Chicago, IL, USA, Dicembre 2006.
- [B.6] N. Mukhi, P. Plebani, T. Mikalsen, and I. Silva-Lepe, "Supporting Policy-driven behaviors in Web services: Experiences and Issues", In Proceedings of the Second International Conference on Service Oriented Computing (ICSOC2004), New York, NY, USA, November 2004, pp. 322-328, ACM Press, 2004.
- [B.7] M. Callea, L. Campagna, M.G. Fugini, P. Plebani, "Contracts for defining QoS levels in a Multichannel Adaptive Information System", in Proceedings of IFIP TC8 Working Conference on Mobile Information Systems (Mobis2004) Oslo, Norway, September 2004, pp. 1-14, Springer, 2004.

- [B.8] C. Marchetti, B. Pernici, P. Plebani, "A Quality Model for Multichannel Adaptive Information Systems", in Alternate Tracks Proceedings of 13th International World Wide Web Conference (WWW2004), New York City, NY, USA, May 2004, pp. 48-54, ACM Press, 2004.
- [B.9] V. De Antonellis, M. Melchiori, B. Pernici, P. Plebani, "A methodology for e-Service substitutability in a Virtual District environment", in Proceedings of CAiSE 03, Velden, Austria, June 2003, LNCS 2681, pp. 552-567, Springer-Verlag, 2003.
- [B.10] M.G. Fugini, P. Plebani, "A methodology for development of trusted cooperative information systems", Proceedings of IRMA, Seattle, USA, May 2002, pp. 251-255, Idea Group Publishing, 2002.
- [B.11] M.G. Fugini, P. Plebani, "Security Aspects in B2M2C Applications: a Case Study", IS2 Conference, Invited Paper, Prague, Czech Rep., May 2001.

## **Book chapters**

- [C.1] B. Pernici, P. Plebani, "E-service Adaptation", in "Service Oriented Computing" D. Georgakopoulos, M. Papazoglou (eds.), Series: Cooperative Information Systems, MIT Press, November 2008
- [C.2] M. Adorni, et al. "Reference Architecture and Framework". In Barbara Pernici (ed.) : Mobile Information Systems Infrastructure and Design for Adaptivity and Flexibility, Springer 2006.
- [C.3] D. Ardagna, et al. "Web Services". In Barbara Pernici (ed.) : Mobile Information Systems Infrastructure and Design for Adaptivity and Flexibility, Springer 2006.
- [C.4] C. Bellettini, M.G. Fugini, P. Plebani, "Fuzzy selection of software components and of web services", in "Soft Computing in Software Engineering", E. Damiani, C. L. Jain, M. Madravio (Eds.), Series: Studies in Fuzziness and Soft Computing , Vol. 159, Springer-Verlag, 2004.
- [C.5] M.G. Fugini, P. Plebani, "A Methodology for Developing Trusted Information Systems: The Security Requirements analysis phase", in Current Security Management & Ethical Issues of Information Technology, IRM Press, 2003.

## **Workshops**

- [D.1] F. Calore, D. Lombardi, E. Mussi, P. Plebani and B. Pernici, "Retrieving substitute services using semantic annotations: a foodshop case study", in Revised Selected Paper of Workshop on Advances in Semantics for Web services (BPM-Semantic4WS 2007), Brisbane, Australia, LNCS 4928, 2008.
- [D.2] L. Baresi, D. Braga, M. Comuzzi, F. Pacifici, P. Plebani, "A Service-based Infrastructure for Advanced Logistics", accepted for International Workshop on Service Oriented Software Engineering (ESEC/FSE-SOSWE 2007), Dubrovnik, Croatia, September 2007.
- [D.3] F. Calore, D. Lombardi, E. Mussi, P. Plebani, B. Pernici, "Retrieving substitute services using semantic annotations: a foodshop case study", Workshop on Advances in Semantics for Web services 2007 Workshop (semantics4ws'07), Brisbane, Australia, September 2007
- [D.4] L. Baresi, S. Guinea, P. Plebani, "WS-Policy for Service Monitorings", accettato per la pubblicazione sui post proceedings di TES05 (Technologies on e-Services) Workshop in conjunction with VLDB 2005, Trondheim, Norvegia, Settembre 2005, Springer-Verlag, 2005.

- [D.5] C. Cappiello, B. Pernici, P. Plebani, "Quality-agnostic or quality-aware semantic service descriptions?", W3C Workshp on Semantic Web Service Framework, Innsbruck, June, 2005. Published on-line: <http://www.w3.org/2005/04/FSWS/Submissions/42/QoSDescription.htm>.
- [D.6] C. Cappiello, P. Missier, B. Pernici, P. Plebani, C. Batini, "QoS in Multichannel IS: the MAIS Approach", Proceedings of the International Workshop on Web Quality (WQ'04) in conjunction with the ICWE 2004, Munich, Germany, July 2004, Rinton Press, 2004.
- [D.7] C. Marchetti, B. Pernici, P. Plebani, "A quality model for e-Service based multi-channel adaptive information systems", in Proceedings of WQW03-WISE Workshop, Rome, Italy, December 2003, pp. 165-172, IEEE Press, 2004.
- [D.8] L. Baresi, D. Bianchini, V. De Antonellis, M.G. Fugini, B. Pernici, and P. Plebani, "Context-aware Composition of E-Services", in Proceedings of TES03 (Technologies on e-Services) Workshop in conjunction with VLDB 2003, Berlin, Germany, September 2003, LNCS 2819, pp. 28-41, Springer-Verlag, 2003.
- [D.9] V. De Antonellis, M. Melchiori, P. Plebani, "An approach to Web Services compatibility in cooperative process", in Proceedings of SAINT03-SOC Workshop, Orlando, USA, January 2003, pp. 95-100, IEEE Press, 2003.
- [D.10] C. Cappiello, C. Francalanci, B. Pernici, P. Plebani, M. Scannapieco, "Data Quality Assurance in Cooperative Information Systems: a Multi-dimension Quality Certificate", Proceedings of ICDT03-DQCIS Workshop, Siena, Italy, January 2003.

### **Italian conferences**

- [E.1] D. Bianchini, V. De Antonellis, B. Pernici, P. Plebani, "Semantic Service Publication and Retrieval in the MAIS Project", in Proceedings SEBD'05, Bressanone Italia, June 2005. (In Italian)
- [E.2] E. Colombo, V. De Antonellis, F. De Rosa, L. De Santis, M. Mecella, M. Melchiori, E. Mussi, B. Pernici, P. Plebani, "Gestione dinamica dei servizi in processi cooperativi", in Atti SEBD'03, Cetraro, Italy, June 2003. (In Italian)
- [E.3] M.G. Fugini, M. Mezzanzanica, P. Plebani, "Il nuovo portale 'Istruzione, Formazione e Lavoro' della Regione Lombardia: interoperabilità e Web Service", Proceedings of AICA, Conversano, Italy, September 2002. (In Italian)
- [E.4] M. Mecella, B. Pernici, P. Plebani, "Servizi in rete per distretti virtuali: un approccio basato sul coordinamento di e-service", Atti AICA, Conversano, Italy, September 2002. (In Italian)

### **Italian magazines**

- [F.1] B. Pernici, P. Plebani, "Introduzione ragionata al mondo dei Web Service", Mondo Digitale, Marzo 2004, AICA. (In Italian)

### **Books**

- [G.1] G. Bigini, M. Brambilla, C. Cappiello, P. Plebani, F. Rizzo, "Eucip - EUCIP - Guida alla certificazione per il professionista IT", Tecniche Nuove, April, 2007. (In Italian)

- [G.2] D. Ardagna, M.G. Fugini, B. Pernici, P. Plebani, "Sistemi informativi basati su Web", Collana Sistemi Informativi a cura di C. Batini, B. Pernici, G. Santucci, vol. 6, Franco Angeli, September, 2006. (In Italian)
- [G.3] L. Baresi, M. Brambilla, C. Cappelletto, P. Plebani, "EUCIP: Esercitazioni", Tecniche Nuove, Ottobre 2005. (In Italian)
- [G.4] M.G. Fugini, F. Maio, P. Plebani, "Sicurezza nei Sistemi Informatici", Apogeo, Marzo 2001. (In Italian)

## **Ph.D. Thesis**

- [H.1] P. Plebani, "Searching and Invoking e-Services in Multichannel Information Systems", Ph.D. Thesis , XVII edition, Dipartimento di Elettronica ed Informazione Politecnico di Milano, 2005.

## **Other publications**

- [I.1] B. Pernici, P. Plebani, "A Reasoned Introduction to The Web Services World", Upgrade (European Journal for the Informatics Professional), Vol. V, No. 6, December 2004. (English version of [RN1])
- [I.2] P. Plebani, "Sicurezza (?) nelle wireless LAN", Login n. 44, Infomedia, January/February 2004. (In Italian)
- [I.3] P. Plebani, "La crittografia: da Giulio Cesare ai certificati digitali", Login, n. 38, Infomedia, January/February 2003. (In Italian)
- [I.4] B. Pernici, P. Plebani, "E-Service adaptation", submitted for publication on Service-Oriented Computing, edited by Michael P. Papazoglou and Dimitrios Georgakopoulos, MIT Press.

## **Teaching activities**

### **Lecturer at Politecnico di Milano**

- 2008-2009 Computer Science Fundamentals (6 CFU – Learning course credits)
- 2007-2008 Information Systems (Polo Regionale di Cremona) (5 CFU – Learning course credits)  
Information System design (2,5 CFU – Learning course credits)
- 2006-2007 Computer Science Fundamentals (10 CFU – Learning course credits)
- 2005-2006 Computer Science Fundamentals (10 CFU – Learning course credits)  
Information System design (2,5 CFU – Learning course credits)
- 1-2005 Business Processes and Information analysis (5 CFU – Learning course credits)  
Information System design (2,5 CFU – Learning course credits)

### **Teaching assistant for the following courses at Politecnico di Milano:**

- 2008-2009 Service technologies
- 2007-2008 Information System design  
Information Technologies for e-Government
- 2006-2007 Information System design  
Information Technologies for e-Government
- 2005-2006 Information System design

Information Technologies for e-Government  
2004-2005 Information Technologies for e-Government  
2003-2004 Information System design  
Information Technologies for e-Government  
2002-2003 Information Systems architecture  
Information Systems  
2000-2002 Computer Science Fundamentals

### **Teaching for professional audience**

2008 "Service Oriented Architectures" Master at Cefriel, Milan  
2007 "Service Oriented Architectures" Master at Cefriel, Milan  
2006 "Java Web services" at IW-Bank, Milan  
2005 "J2EE Enterprise Java Bean fundamentals" at Fabbrica Digitale, Casalmaggiore (CR)  
2001-2005 "Web sites design with Macromedia Dreamweaver" at Politecnico di Milano  
(6 editions)  
2002 "Multimedia authoring", IFTS-FSE Master at Politecnico di Milano  
2001 "Local Network and TCP/IP protocols" at HP Italy