

Curriculum vitae

Prof. Dr. Holger Wache

Holger Wache is professor for information integration, enterprise application integration, and information and knowledge management --- especially semantic technologies and ontology engineering --- in the School of Economics, Institute for Business Information Technology at the University of Applied Sciences North Western Switzerland (FHNW), Switzerland.

He studied computer science and electric engineering at the University of Kaiserslautern. After receiving his Diplom (Master) in 1991, he worked at the University of Dortmund (computer science department) in the project WINA for one year. The topic of WINA was to extract Fuzzy-Rules from a learned neuronal network.

In 1992 he returned to the research department for Intelligent Engineering Systems at the German Research Center for Artificial Intelligence (DFKI GmbH) Kaiserslautern. He continued his research in the TOOCON and in the VEGA project. TOOCON investigated how all the knowledge representations can be combined for the purpose of configuring technical devices. VEGA tries to combine several different machine-learning technologies.

In year 1996 he changed to the University of Bremen (computer science). There he worked in several projects like MOKASSIN, AIKUL and KNOWWORK. All of them were tackling integrating IT systems with the help of knowledge-based techniques. After he received his PhD he was the managing director of the intelligent systems department at the Center of Computing Technologies (TZI). Before he joined the department in Amsterdam, he was the consultant of TZI on behalf of a big German company with a branch in Bremen, Germany.

From 2004 to 2007 Holger Wache held a postdoc position in the artificial intelligence department at the Vrije Universiteit Amsterdam, The Netherlands. His research was focussed on the semantic web where semantic technologies like ontologies can be applied to the Internet.

Teaching Obligations

Current Courses

Bachelor "Wirtschaftsinformatik"

- Internet & Netzwerke (in German)

Master "Business Information Systems"

- Workflow Management Systems and Service-oriented Architectures
- Knowledge Engineering & Knowledge Technologies

Past Courses

AS 2013

Bachelor "Wirtschaftsinformatik"

- Enterprise Application Integration (in German)
- Einführung in die Wirtschaftsinformatik (in German)

Master "Business Information Systems"

- Workflow Management Systems and Service-oriented Architectures

SS 2013

Bachelor "Wirtschaftsinformatik"

- Advanced Knowledge Technologies

Master "Business Information Systems"

- Knowledge Engineering

AS 2012

Bachelor "Wirtschaftsinformatik"

- Enterprise Application Integration (in German)
- Einführung in die Wirtschaftsinformatik (in German)

Master "Business Information Systems"

- Workflow Management Systems and Service-oriented Architectures

SS 2012

Bachelor "Wirtschaftsinformatik"

- Advanced Knowledge Technologies

Master "Business Information Systems"

- Knowledge Engineering

AS 2011

Bachelor "Wirtschaftsinformatik"

- Internet und XML (in German)
- Enterprise Application Integration (in German)

SS 2011

Bachelor "Wirtschaftsinformatik"

- Enterprise Application Integration (in German)
- Advanced Knowledge Technologies
- Software-Architekturen (in German)

Master "Business Information Systems"

- Knowledge Engineering

AS 2010

In AS 2010 Holger Wache was not lecturing.

SS 2010

Bachelor "Wirtschaftsinformatik"

- Enterprise Application Integration (in German)
- Advanced Knowledge Technologies

Master "Business Information Systems"

- Knowledge Engineering

AS 2009

Bachelor "Wirtschaftsinformatik"

- Internet und XML (in German)

SS 2009

Bachelor "Wirtschaftsinformatik"

- Enterprise Application Integration (in German)
- Advanced Knowledge Technologies

Master "Business Information Systems"

- Knowledge Engineering

AS 2008

- Internet und WWW (in German)
- Klassische Konzepte des Software-Engineering (in German)

SS 2008

- Enterprise Application Integration (in German)
- Software-Architekturen (in German)
- Grundlagen des Software-Engineering (in German)
- Software-Management (in German)
- Advanced Knowledge Technologies
- Informatik Projekt (in German)

AS 2007/2008

- Enterprise Application Integration (in German)
- Internet und WWW (in German)
- Klassische Konzepte des Software-Engineering (in German)
- Web-Engineering (in German)

SS 2007

- Enterprise Application Integration (in German)
- Telekommunikation und Internet (in German)
- Kommunikationsnetzwerke (in German)
- Grundlagen des Software-Engineering (in German)
- Software-Management (in German)

Publications

Books

2003

1. Wache, H. Semantische Mediation für heterogene Informationsquellen. Akademische Verlagsgesellschaft Aka GmbH, Berlin, Dissertationen zur Künstlichen Intelligenz , 2003. [pdf.](#)

Articles in Journals

2009

2. Dolog, P.; Stuckenschmidt, H.; Wache, H. and Diedrich, J. Relaxing RDF Queries based on User and Domain Preferences. In Journal of Intelligent Information Systems, 33 (3): 239-260, 2009. [pdf.](#)

2003

3. Wache, H. Semantische Mediation für heterogene Informationsquellen. In Künstliche Intelligenz (KI) (4): 56-57, 2003. [pdf.](#)

2001

4. Fensel, D.; Baader, F.; Rousset, M-C. and Wache, H. Editorial: Heterogeneous information resources need semantic access. In Data and Knowledge Engineering (DKE), Special Issue on Heterogeneous information resources need semantic access, 36 (3): 211-213, 2001.
5. Visser, U.; Stuckenschmidt, H.; Schlieder, C.; Wache, H. and Timm, I. Terminology Integration for the Management of distributed Information Resources. In Künstliche Intelligenz (KI), 16 (1): 31-34, 2001. [pdf.](#)

2000

6. Wache, H. and Fensel, D. Editorial: Intelligent Integration of Information. In International Journal of Cooperative Information Systems (IJCIS), Special Issue on Intelligent Integration of Information, 9: 357-359, 2000.
7. Joeris, G.; Herzog, O. and Gronemann, H. W. u. B. Flow.net: Workflow Support for Inter-Organizational Engineering and Production Processes. In International Journal on Agile Manufacturing, Special Issue on Information Management for Productivity Enhancement, 2000. [pdf.](#)
8. Joeris, G.; Wache, H. and Herzog, O. MOKASSIN - Innovative Technologien zum Prozeßmanagement und zur semantischen Datenintegration. In Künstliche Intelligenz (KI), 14 (1): 52-54, 2000. [pdf.](#)

Papers at Conferences/Workshops

2013

9. Ruehl, S. T.; Wache, H. and Verclas, S. A.W. Capturing Customers' Requirements towards Mixed-tenancy Deployments of SaaS-Applications. In IEEE Cloud 2013, pages 462-469, IEEE Computer Society Press, 2013. [pdf.](#)

2012

10. Aureli, L.; Pierfranceschi, A. and Wache, H. Enterprise Architecture for Cloud Computing. In IEEE Cloud 2012, pages 979-980, IEEE Computer Society Press (An extended version is available as [technical report](#)), 2012. [pdf.](#)

2010

11. Grivas, S. G.; Kumar, T. U. and Wache, H. Cloud Broker: Bringing Intelligence into the Cloud --- An Event-Based Approach. In IEEE Cloud 2010, pages 544-545, IEEE Computer Society Press, 2010. pdf..
12. Ebner, D.; Grivas, S. G.; Kumar, T. U. and Wache, H. Enterprise Architecture Frameworks for Enabling Cloud Computing. In IEEE Cloud 2010, pages 542-543, IEEE Computer Society Press, 2010. pdf..

2009

13. Harmelen, F. v.; Teije, A. t. and Wache, H. Knowledge engineering rediscovered: towards reasoning patterns for the semantic web. In K-CAP '09: Proceedings of the fifth international conference on Knowledge capture, pages 81-88, ACM, New York, NY, USA, 2009.

2007

14. Bortoli, S.; Stoermer, H.; Bouquet, P. and Wache, H. Foaf-O-Matic - Solving the Identity Problem in the FOAF Network. In Proceedings of 4th Workshop on Semantic Web Applications and Perspectives (SWAP 2007), Bari, Italy, CEUR Workshop Proceedings , 2007. pdf..
15. Feldkamp, D.; Hinkelmann, K. and Wache, H. Dealing with knowledge intensive services in e-Government. A case study. In Proceedings of Workshop on Applications of Semantic Technologies at Informatik 2007 - Informatik trifft Logistik, pages 212-216, Köllen Druck und Verlag GmbH, Bonn, Lecture Notes in Informatics (LNI) , 2007. pdf..
16. Mochol, M.; Jentzsch, A. and Wache, H. Suitable employees wanted? Find them with semantic techniques. In Proceedings of Workshop on Making Semantics Web For Business at European Semantic Technology Conference 2007 (ESTC2007)", Vienna, Austria, 2007. pdf..
17. Mochol, M.; Wache, H. and Nixon, L. J. B. Improving the Accuracy of Job Search with Semantic Techniques. In Proceedings of 10th International Conference of Business Information Systems (BIS 2007), pages 301-313, Springer, Lecture Notes in Computer Science 4439, 2007. pdf..

2006

18. Stuckenschmidt, H.; Serafini, L. and Wache, H. Reasoning about Ontology Mappings. In ECAI 2006 Workshop on Context Representation and Reasoning, Riva del Garda, Italy, 2006. pdf..
19. Dolog, P.; Stuckenschmidt, H. and Wache, H. Robust Query Processing for Personalized Information Access on the Semantic Web. In 7th International Conference on Flexible Query Answering Systems (FQAS 2006), pages 343-355, Springer, Milan, Italy, Lecture Notes in Computer Science (LNCS) 4027, 2006. pdf..
20. Flouris, G.; Huang, Z.; Pan, J. Z.; Plexousakis, D. and Wache, H. Inconsistencies, Negations and Changes in Ontologies. In Proc. of the 21st National Conference on Artificial Intelligence (AAAI 2006), pages 1295-1300, 2006. pdf..
21. Mochol, M.; Wache, H. and Nixon, L. Improving the recruitment process through ontology-based querying. In First International Workshop on Applications and Business Aspects of the Semantic Web (SEBIZ 2006), pages 59-73, Athens, GA, USA, 2006. pdf..

2005

22. Wache, H.; Groot, P. and Stuckenschmidt, H. Scalable Instance Retrieval for the Semantic Web by Approximation. In Proceedings of Web Information Systems Engineering - WISE 2005 Workshops; workshop Scalable Semantic Web Knowledge Base Systems, pages 245-254, Springer, Lecture Notes in Computer Science 3807, 2005. pdf..
23. Serafini, L.; Stuckenschmidt, H. and Wache, H. A Formal Investigation of Mapping Language for Terminological Knowledge. In Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI 2005), pages 576-581, Professional Book Center, 2005. pdf..
24. Groot, P.; Stuckenschmidt, H. and Wache, H. Approximating Description Logic Classification for Semantic Web Reasoning. In Proceedings of the Second European Semantic Web Conference (ESWC 2005), pages 318-332, Springer-Verlag, Berlin, Heidelberg, Lecture Notes in Computer Science , 2005. pdf..

2002

25. Wache, H.; Visser, U. and Scholz, T. Ontology Construction - An Iterative and Dynamic Task. In Proceedings of the Florida Artificial Intelligence Research Society Conference (FLAIRS), pages 445-449, AAAI press, Pensacola, FL, USA, 2002. [pdf.](#)

2001

26. Neumann, H.; Schuster, G.; Stuckenschmidt, H.; Visser, U. and Vögele, T. Intelligent Brokering of Environmental Information with the BUSTER System. In Proceedings of the International Symposium Informatics for Environmental Protection, pages 505-512, Metropolis, Zürich, Schweiz, 2001. [pdf.](#)
27. Wache, H.; Vögele, T.; Visser, U.; Stuckenschmidt, H.; Schuster, G.; Neumann, H. and Hübner, S. Ontology-based Integration of Information --- a Survey of Existing Approaches. In Proceedings of the IJCAI-Workshop Ontologies and Information Sharing, pages 108-117, Seattle, WA, 2001. [pdf.](#)
28. Wache, H. and Stuckenschmidt, H. Practical Context Transformation for information system interoperability. In Modeling and Using Context, Third international and Interdisciplinary Conference, CONTEXT 2001, pages 367-381, Springer Verlag, Dundee, UK, 2001. [pdf.](#)

2000

29. Stuckenschmidt, H. and Wache, H. Context Modelling and Transformation for Semantic Interoperability. In Proceedings of the International Workshop on Knowledge Representation Meets Databases (KRDB), pages 115-128, Berlin, Germany, 2000. [pdf.](#)
30. Stuckenschmidt, H.; Wache, H.; Vögele, T. and Visser, U. Enabling Technologies for Interoperability. In Workshop on the 14th International Symposium of Computer Science for Environmental Protection, pages 35-46, TZI, University of Bremen, Bonn, Germany, 2000.

1999

31. Wache, H. Towards Rule--Based Context Transformation in Mediators. In Proceedings of the International Workshop on Engineering Federated Information Systems (EFIS 99), pages 107-122, infix-Verlag, Kühlungsborn, Germany, 1999. [pdf.](#)
32. Gronemann, B.; Joeris, G.; Scheil, S.; Steinfort, M. and Wache, H. Supporting Cross-Organizational Engineering Processes by Distributed Collaborative Workflow Management - The MOKASSIN Approach. In 2nd Symposium on Concurrent Multidisciplinary Engineering (CME) / 3rd International Conference on Global Engineering Networking (GEN), Bremen, Germany, 1999.
33. Wache, H.; Scholz, Th.; Stieghahn, H. and König-Ries, B. An Integration Method for the Specification of Rule--Oriented Mediators. In Proceedings of the International Symposium on Database Applications in Non-Traditional Environments (DANTE), pages 109-112, Kyoto, Japan, 1999. [pdf.](#)

1997

34. Günter, A. and Wache, H. Konfigurieren mit Beschreibungslogiken. In 11. Workshop Planen und Konfigurieren (PuK-97), Bad Honnef bei Bonn, Germany, 1997.
35. Joeris, G.; Klauk, Ch. and Wache, H. A Flexible Agent-Based Framework for Process Management. In Proceedings of the 3rd Knowledge Engineering Forum, Kaiserslautern, Germany, 1997. [pdf.](#)

1996

36. Abecker, A. and Wache, H. Configuration as a Constraint Processing Task. In Notes of the 1. DFKI Workshop on Constraint-Based Problem Solving, Deutsches Forschungszentrum für Künstliche Intelligenz, Document D--96--02, 1996.
37. Wache, H. and Kamp, G. Using description logic for configuration problems. In WRKP-96: Knowledge Representation and Configuration Problems, DFKI GmbH, Kaiserslautern, DFKI-Report, 1996. [pdf.](#)

38. Kamp, G. and Wache, H. Using Description Logics for Consistency-based Diagnosis. In Proceedings of Description Logic Workshop, pages 136-140, AAAI Press, Boston, MA, 1996. [pdf.](#)

1995

39. Abecker, A.; Boley, H.; Hinkelmann, K.; Wache, H. and Schmalhofer, F. An Environment for Exploring and Validating Declarative Knowledge. In ILPS-95 Workshop on Logic Programming Environments, pages 11-13, Portland, Oregon, 1995.

1994

40. Abecker, A. and Wache, H. A Layer Architecture for the Integration of Rules, Inheritance, and Constraints. In Proceedings ICLP-94 Post-Conference Workshop on The Integration of Declarative Paradigms, pages 12-22, Max-Planck-Institut für Informatik, Saarbrücken, MPI-Report, 1994. [pdf.](#)

1993

41. Wache, H. and Tsarchopoulos, P. Ein erweitertes CLP-Schema für eine hybride Wissensverarbeitung. In Proceedings Workshop on Neuere Entwicklungen der deklarativen KI-Programmierung, DFKI GmbH, Kaiserslautern, DFKI-Report, 1993. [pdf.](#)

Proceedings

2001

42. Fensel, D.; Baader, F.; Rousset, M-C. and Wache, H., ed. Data and Knowledge Engineering (DKE), Special Issue on Heterogeneous information resources need semantic access., 2001.

2000

43. Wache, H. and Fensel, D., ed. International Journal of Cooperative Information Systems (IJCIS), Special Issue on Intelligent Integration of Information., 2000.

Publications in Collections

2001

44. Visser, U.; Stuckenschmidt, H.; Wache, H. and Vögele, T. Using Environmental Information Efficiently: Sharing Data and Knowledge from Heterogeneous Sources. In Kap.: Environmental Information Systems in Industry and Public Administration, pages 41-73, Idea Group Publishing, Hershey (PA), 2001.

1998

45. Herzog, O.; Joeris, G.; Klauck, C.; Visser, U. and Wache, H. MOKASSIN - Modellierung komplexer Anwenderanforderungen für die Gestaltung von Software-Systemen mit innovativen Ansätzen für technische und organisatorische Prozesse am Beispiel der Anwendungen von Workflow. In Tagungsband Medizinische Forschung und Gesundheitswissenschaften, 1. Symposium Bremer Kliniken, Universität Bremen, 1998.

Technical Reports

2012

46. Aureli, L.; Pierfranceschi, A. and Wache, H. Enterprise Architecture for Cloud Computing (long version). Technical Report 28, University of Applied Sciences and Arts Northwestern Switzerland, Riggensbachstrasse 16, 4600 Olten, Switzerland, 2012. [pdf.](#)

1996

47. Kamp, G. and Wache, H. CTL - A description logic with expressive concrete domains. Technical Report LKI-Report M/96-01, Labor für Künstliche Intelligenz, Universität Hamburg, 1996. [pdf.](#)