CURRICULUM VITÆ
(as of June 2012)

Ubbo Visser

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Research Statement

I am a computer scientist with research specialization in artificial intelligence for robotics and web technologies. The focus of my research pertains to the development and usage of hybrid systems as well as the combination of symbolic knowledge-based systems, artificial neural networks and machine learning in the areas "Semantic Web" and "Multiagent Systems (RoboCup, Games)". My focus in the Semantic Web area lies in the development of methods that combine terminological logics and spatio-temporal representation and reasoning techniques. The focus in the Multiagent Systems area lies in the development of techniques for agents that act in highly dynamic and real-time environments. This is challenging and offers a multitude of research potential for the future.

I have co-invented a new game engine that is used for OFFICIAL BUNDESLIGA MANAGER, a complex real-time soccer simulator that is based on actual data of real soccer players. The underlying technology is a hierarchical three-tier multiagent system that consists of autonomous BDI agents and allows dynamic group structures. The engine is online and comes with a new generation and state-of-the-art 3D visualization engine. Fundamental research within the domain of the RoboCup simulation league is the basis for this technology.

Professional Preparation

- **Habilitation in Computer Science** (December 2003).
  Title of the thesis: "Intelligent Information Integration for the Semantic Web".
  Universität Bremen, Germany
  Thesis committee: Otthein Herzog (chair), Hans-Jürgen Appelrath, Frank van Harmelen, Christian Freska.
  Note: *A habilitation in Germany is the qualification for a Full Professorship*
- **PhD in Geoinformatics** (December 1995).
  Title of the thesis: "Development and application of neural networks within the framework of the rule-based plant protection expert system PRO_PLANT".
  Universität Münster, Germany.
  Thesis committee: Ulrich Streit (chair), Julius Werner, Ludger Paus.
  Note: *I studied Computer Science as a major during the time of my PhD thesis.*

- **MSc in Geography, Major: Landscape Ecology** (October 1988).
  Title of the thesis: "The evaporation measuring at continental lakes as a problem of the applied hydrology".
  Universität Münster, Germany.

Appointments

- **University of Miami**, June 2012 - present.
  Associate Professor and Head of AI & Games Group in the Department of Computer Science. Research on knowledge representation and reasoning for autonomous agents and semantic web.
- **University of Miami**, August 2010 - May 2012.
  Research Associate Professor and Head of AI & Games Group in the Department of Computer Science. Research on knowledge representation and reasoning for autonomous agents and semantic web.
- **University of Miami**, August 2008 - August 2010.
  Visiting Associate Professor in the Department of Computer Science. Research on knowledge representation and reasoning for autonomous agents and semantic web, games.
- **aitainment GmbH**, March 2007 - present.
  Co-Founder and Consultant for AI-based technologies for autonomous multi-agent systems for online sports games (www.bundesliga.de (Bundesliga Manager), www.topleague.de).
- **Universität Bremen**, January 2004 - July 2008.
  Privatdozent (Assistant Professor with qualification for a Full Professorship) in the Department of Computer Science and Center for Computing Technologies. Research on knowledge representation and reasoning for autonomous agents and semantic web.
- **Universität Bremen**, November 1998 - December 2003.
  Assistant Professor in the Department of Computer Science and Center for Computing Technologies. Research on knowledge representation and reasoning for autonomous agents and semantic web.
- **Universität Bremen**, July 1997 - October 1998.
  Managing Director of the area 'Intelligent Systems' at the Center for Computing Technologies. Management and budgeting of a group of 15 researchers.
- **Queensland University of Technology**, July 1996 - July 1997.
  Post-Doctoral Fellow at the Neurocomputing Research Centre, School of Computer Science. Research on knowledge-based systems and artificial neural networks. Application domain: agriculture and horticulture.
- **Queensland University of Technology**, January 1996 - June 1996.
  Visiting Researcher (Scholarship from German Ministry for Science and Education (BMBF)) at the Neurocomputing Research Centre, School of Computer Science. Research on knowledge-based systems and artificial neural networks. Application domain: agriculture and horticulture.
- **Universität Münster**, January 1991 - December 1995.
  Senior researcher at the Institut for Agricultural Informatics (associated with Uni Münster, founded in 01/91). Research on expert systems and artificial neural networks. Software development for a plant protection expert system. Application domain: agriculture.

- **Universität Münster**, July 1989 - December 1990.
  Junior researcher within the working group 'Agricultural Informatics'. Research on expert systems and artificial neural networks. Software development for a plant protection expert system. Application domain: agriculture.
- **Universität Münster**, October 1988 - June 1989.
  Junior researcher within the working group 'Wind Climatology'. Research on local wind climatology effects: Application domain: wind energy converters.
- **Department of Water and Waste** (State of North-Rhine Westphalia), Summer 1986.
  Summer intern. Programming on a new precipitation-flow-off model. Mainly numerical mathematical modeling for flow-off behavior on the landscape.
- **Universität Münster**, September 1986 - October 1988.
  Graduate Research Assistant. Department of Geography, working group 'Hydrology'. Programming on a new precipitation-flow-off model. Mainly numerical mathematical modeling for run-off behavior on the landscape.
- **Universität Münster**, May 1986 - September 1986.
  Graduate Research Assistant. Department of History. Work on Geographical Information Systems, mainly digitalization and visualization of maps. Application area: History.

Research & Software Engineering Distinctions

- **ONLINESTAR 2009**, prestigious award presented to DFL, German Soccer Association, for best Internet-Sports-Site, my game Bundesliga Manager, played a crucial role for this.
- **Scientific Challenge Award** for a paper titled Recognition and Prediction of Motion Situations Based on a Qualitative Motion Description", RoboCup Symposium 2003.
- **Best paper award (2nd place)** at the international conference on "Business informatics and information systems in the finance business" (WI-IF) (out of 266 papers). The title of the paper is "Intelligent Brokering of Environmental Information with the BUSTER system", 2001.
- **Best innovative regional software (2nd place)** awarded by the North-Rhine Westphalian government (largest state in Germany). Team member and head of development of a group of 25 people who developed a plant protection expert system (PRO_PLANT), 1994.
- **Artificial Intelligence Award of the Society for Informatics (GI)**: The PRO_PLANT group won at the Second German Conference on Expert Systems in Hamburg (out of 27 systems), 1993.
- **Final qualifier** at the German-Austrian academic college software prize (which means that the system is one of the five best systems out of 45 other systems).
- **Best new software prize**. The PRO_PLANT group was awarded at the worlds largest agricultural exhibition (Agritechnica) in Frankfurt, Germany, 1993.
- **ACER award (2nd place)** The PRO_PLANT group became second for the "conception of a decision-supported plant protection advisory system", 1990.

Research Grants

The total amount of grants awarded is approximately 9.5 Million Dollars (exact amount: 6,390,092 Euros) out of which almost **6.9 Million Dollars** have been raised as **Sole PI** or Head of Funding Committee. Please note that I did **not** count any overhead for research institutions. The awarded grants include peer-reviewed fundamental research grants, applied research grants, industry grants as well as grants for educational projects. The awarded grants come from international and national funding organizations as well as from governmental organizations and from industry.

Research Grants Pending or In Progress

- *Simplifying encoding of bioassays to accelerate translational drug discovery*, U. Visser & S. Schürer are **subcontractors**, SBIR Phase I grant, NIH, 09/12 - 05/13, 150,000 US Dollars, pending.
- *CRCNS Data Sharing: Opioid Drug Ontology (ODO)*, U. Visser is **Co-Investigator**, Collaborative Research in Computational Neuroscience, NSF Grant, 10/11 - 09/14, 1,132,932 US Dollars, pending.
- *RegenBase: A Searchable Database to Organize Regeneration Knowledge via Ontologies*, U. Visser is **Co-Investigator**, NIH RO1 proposal, 07/12 - 06/16, 2,984,572 US Dollars, pending.
- *BioAssay Ontology Integration (BAO successor)*, U. Visser is **Co-PI**, NIH proposal, 7/12 - 06/15, 1,500,000 US Dollars, in preparation.
- *SHB: Small: Development of a Computerized Health and Wellness Coach based on Ontologies*, U. Visser is **Co-PI**, IIS - Smart Health & Wellbeing, NSF Grant, 9/12 - 8/15, 500,000 US Dollars, in preparation.

Research Grants in the USA

- *LINCS Information FramEwork (LIFE) to Integrate and Analyze Diverse Data Sets*, U. Visser is **Co-PI**, NIH-LINCS Strategic Grant (U01HL111561), 09/11-08/13, 100,000 US Dollars for U. Visser.
- *BioAssay Ontology*, U. Visser is **Co-Investigator**, NIH Grant (NHGRI 1RC2HG005668-01), 10/09 - 09/11, 80,000 US Dollars for U. Visser
- *Boosting the 3D SSL Simulator*, U. Visser is **Co-PI**, RoboCup Federation Funding, 02/11 - 04/11, 5,000 US Dollars
- *Feasibility Study for Online Browser Games in the USA*, U. Visser is **Sole PI**, Internal Grant U of M, 04/09 - 07/09, 20,000 US Dollars, (internal UM grant)

Research Grants in Europe

- *aitainment - Multiagent online soccer game*, U. Visser is **Co-PI**, Industry R&D grant 03/10 - 02/12, 750,000 Euros
- *coach and win - Multiagent online soccer game*, U. Visser is **Sole PI**, German Government, High-Tech Seed Fund, 02/07 - 01/11, 570,000 Euros
- *Multiagent Visualization of real-time ticker messages*, U. Visser is **Sole PI**, Industry grant 09/09 - 03/10, 90,000 Euros
- *aitainment - Multiagent online soccer game*, U. Visser is **Sole PI**, Industry grant 05/09 - 05/10, 200,000 Euros

- *aitainment - Multiagent online soccer game*, U. Visser is **Sole PI**, Industry grant 03/08 - 05/09, 325,000 Euros
- *Automatic recognition of plans and intentions of adversarial mobile robots in cooperative and concurrent dynamic environments* , U. Visser is **Co-PI**, special research program RoboCup (SPP 1125, period 3), German Research Council (DFG), 11/05 - 10/08, 300,000 Euros
- *RoboCup - Transfer*, Applied research project in the area of mobile robots that act in dynamic real-time environments, U. Visser is **Sole PI**, Special research program (FIP), State Government, 10/04 - 09/07, 211,000 Euros
- *RoboCup - Virtual Bundesliga*, Applied research grant, U. Visser is **Sole PI**, State Government, Senator for Education and Science, 01/06 - 06/06, 110,000 Euros
- *Internetcommunities II - Future trends for online gaming*, U. Visser is **Sole PI**, State Government, 09/07 - 02/08, 75,000 Euros
- *Internetcommunities - Future trends for online gaming*, U. Visser is **Sole PI**, State Government, 05/07 - 08/07, 50,000 Euros
- *Moving - Image-based navigation for underwater vehicles*, U. Visser is **Co-PI**, State Government - Robotics Initiative, 09/06 - 02/08, 77,000 Euros
- *RoboCup - Outdoor robots*, U. Visser is **Co-PI**, Federal Ministry for Education and Research (BMBF), 03/06 - 08/06, 115,000 Euros
- *RoboCup - Schools*, Research and education project in the area of mobile robots that act in dynamic real-time environments, U. Visser is **Co-PI**, Special research and education program, Senator for Education and Science, State Government, 09/04 - 09/06, 145,000 Euros
- *RoboCup - WorldCup*, U. Visser is **Head of OC**, State Government, Industry, 09/04 - 10/06, 2,400,000 Euros
- *Small personal grants*, U. Visser is **Sole PI**, travel grants for International Conferences, German Research Council (DFG), 2003, 2005, 7,500 Euros.
- *Automatic recognition of plans and intentions of adversarial mobile robots in cooperative and concurrent dynamic environments* , U. Visser is **Co-PI**, special research program RoboCup (SPP 1125, period 2), German Research Council (DFG), 11/03 - 10/05, 225,000 Euros
- *GeoShare - Intelligent Use of Geodata*, U. Visser is partner University Faculty, European Commission, INTERREG IIIb., 12/02 - 11/05, 225,000 Euros
- *MeanInGS - Semantic Interoperability with the help of Geoservices*, U. Visser is **Co-PI**, German Research Council and Federal Ministry for Education and Research (DFG/BMBF), 10/02 - 09/04, 240,000 Euros
- *Automatic recognition of plans and intentions of adversarial mobile robots in cooperative and concurrent dynamic environments* , U. Visser is **Co-PI**, special research program RoboCup (SPP 1125, period 1), German Research Council (DFG), 11/01 - 10/03, 225,000 Euros
- *Modeling Real Property Transactions*, U. Visser is partner University Faculty, European Commission, COST Action G9, 03/01 - 02/03, 45,000 Euros
- *Various small research grants, e.g. GWG-GIS, Revision, EISA*, U. Visser is **Sole PI**, State Government, Senator for Environmental Affairs, 07/96 - 03/01, 37,500 Euros
- *DataShare - Intelligent Data Integration and Sharing*, U. Visser is partner University Faculty, European Commission, INTERREG IIc., 11/99 - 04/01, 165,000 Euros
- *WinSpect - Wireless communication and knowledge discovery for maintenance of large industry plants*, U. Visser is **Sole PI**, Special research program (ISP II/12), State Government, 10/99 - 09/02, 91,000 Euros

- *BUISY - Bremen Environmental Information System*, U. Visser is **Sole PI**, State Government, Senator for Environmental Affairs, 09/98 - 05/99, 60,000 Euros
- *Multimedia Unterweser*, Special information system for water/waste water, U. Visser is **Sole PI**, State Government, Senator for Environmental Affairs, 09/98 - 03/99, 25,000 Euros
- *Artificial Neural Networks and Rule-Extraction for Agricultural Expert Systems*, U. Visser is **Sole PI**, Personal funding from Federal Ministry for Education and Research (BMBF), 01/96 - 07/96, 15,000 Euros

Research Grants in Australia

- *PP-Banana - A decision support system for reducing pesticides in banana crops*, U. Visser is **Sole PI**, Australian Research Council (ARC-Collab), 04/97 - 03/01, 70,000 Euros
- *DAISY - Computer Support for On-Farm Breeding Decisions*, U. Visser is **Sole PI**, Australian Research Council (ARC-Small), 11/96 - 07/97, 20,000 Euros

Publications

Books

[1] U. Visser, F. Ribeiro, T. Ohashi, and F. Dellaert, eds., *RoboCup 2007: Robot Soccer World Cup XI*, vol. 5001 of *Lecture Notes in Artificial Intelligence*. Heidelberg: Springer, 2008.

[2] U. Visser, *Intelligent Information Integration for the Semantic Web*, vol. 3159 of *Lecture Notes in Artificial Intelligence*. Heidelberg: Springer, 1 ed., 2005.

Journals

[1] T. Warden and U. Visser, "Real-time spatio-temporal analysis of dynamic scenes," *Knowledge and Information Systems*, vol. 27, pp. 1–37, June 2011.

[2] U. Visser, S. Abeyruwan, U. Vempati, R. Smith, V. Lemmon, and S. Schürer, "Bio-Assay Ontology (BAO): A Semantic Description of Bioassays and High-Throughput Screening Results," *BMC Bioinformatics*, vol. 12, pp. 257–273, July 2011.

[3] U. Visser, "Interview mit Prof. Kerstin Schill, Professorin an der Universität Bremen," *KI - Künstliche Intelligenz*, vol. 25, pp. 347–349, Oct. 2011.

[4] U. Visser, "Interview mit Prof. Wolfgang Wahlster, Leiter des DFKI und Professor an der Universität des Saarlandes," *KI - Künstliche Intelligenz*, vol. 25, pp. 341–345, Oct. 2011.

[5] U. Visser, "Interview with Prof. Manuela Veloso, President of the RoboCup Federation and President-Elect of AAAI," *KI - Künstliche Intelligenz*, vol. 25, pp. 87–88, Oct. 2010.

[6] H.-D. Burkhard, U. Visser, M. Jüngel, A. Bredenfeld, and T. Christaller, "Challenges for AI and Robotics," *Künstliche Intelligenz*, vol. 20, pp. 5–11, February 2006.

[7] M. Klein and U. Visser, "Semantic Web Challenge 2004," *Journal of Web Semantics*, vol. 3, no. 2-3, pp. 209–210, 2005.

[8] T. Wagner, U. Visser, and O. Herzog, "Egocentric Qualitative Spatial Knowledge Representation for Physical Robots," *Robotics and Autonomous Systems*, vol. 49, no. 1-2, pp. 25–42, 2004.

[9] L. Bernard, S. Haubrock, S. Hübner, R. Lessing, M. Lutz, and U. Visser, "Semantic Translation in Geodata Infrastructures - Requirements and methods of Resolution," *Photogrammetrie - Fernerkundung - Geoinformation (PFG)*, vol. 10, no. 6, pp. 451–461, 2003.

[10] U. Visser, H. Stuckenschmidt, C. Schlieder, H. Wache, and I. Timm, "Terminology Integration for the Management of Distributed Information Resources," *Künstliche Intelligenz (KI), Special Issue Knowledge Management*, vol. 16, no. 1, pp. 31–34, 2002.

[11] U. Visser, H. Stuckenschmidt, G. Schuster, and T. Vögele, "Ontologies for Geographic Information Processing," *Computers & Geosciences*, vol. 28, pp. 103–118, February 2002.

[12] U. Visser, U. Voges, K. Epke, R. Pfeiffer, and U. Streit, "Umweltschonender Pflanzenschutz mit Hilfe des Expertensystems PRO_PLANT," *Künstliche Intelligenz (KI)*, vol. 93, no. 3, pp. 34–43, 1993.

Magazine Articles

[1] U. Visser, "KI und Roboter," *KI - Künstliche Intelligenz*, vol. 24, no. 3, pp. 185–187, 2010.

[2] U. Visser and H.-D. Burkhard, "RoboCup 2006: achievements and goals for the future," *AI Magazine*, vol. 28, no. 2, pp. 115–130, 2007.

[3] U. Visser and M. Klein, "Semantic Web Challenge," *IEEE Intelligent Systems*, vol. 19, no. 3, pp. 31–33, 2004.

[4] S. Hübner, R. Spittel, U. Visser, and T. Vögele, "Ontology-based search for interactive digital maps," *IEEE Intelligent Systems*, vol. 19, no. 3, pp. 80–86, 2004.

[5] U. Visser and P. Doherty, "Issues in designing physical agents for dynamic real-time environments: World modeling, planning, learning, and communicating," *AI Magazine*, vol. 25, no. 2, pp. 137–138, 2004.

[6] A. Miene, A. Lattner, U. Visser, and O. Herzog, "Dynamic-preserving qualitative motion description for intelligent vehicles," in *IEEE Intelligent Vehicles Symposium*, (Parma, Italy), pp. 642–646, IEEE, 2004.

Book Chapters

[1] C. Lisetti, U. Yasavur, C. de Leon, R. Amini, U. Visser, and N. Rishe, "Building an On-demand Embodied Conversational Agent for Behavior Change," in *Proceedings of FLAIRS 2012*, Association for the Advancement of Artificial Intelligence (www.aaai.org), 2012, submitted.

[2] U. Vempati, U. Visser, S. Abeyruwan, K. Sakurai, M. Przydzial, C. Chung, R. Smith, A. Koleti, C. Mader, V. Lemmon, and S. Schürer, "BioAssay Ontology to describe high-throughput screening assays and their results," in *Proceedings of the International Conference on Biomedical Ontology (ICBO)*, p. in press, 2011.

[3] C. L. Lisetti, U. Yasavur, U. Visser, and N. Rishe, "Toward conducting motivational interviewing with an on-demand clinician avatar for tailored health behavior change interventions," in *PH11: Pervasive Health 2011 5th International Conference on Pervasive Computing Technologies for Healthcare 2011*, IEEE Computer Society, 2011.

[4] A. Seekircher, A. Saminda, and U. Visser, "Accurate ball tracking with Extended Kalman Filters as a pre-requisite for a high-level behavior with Reinforcement Learning," in *Humanoids* (S. Behnke, T. Roefer, and P. Stone, eds.), 2011. submitted.

[5] J. Stoecker and U. Visser, "RoboViz: Programmable Visualization for Simulated Soccer," in *RoboCup 2011: Robot Soccer World Cup XV* (T. Röfer, N. M. Mayer, J. Savage, and U. Saranli, eds.), 2011. to appear.

[6] U. Visser, "TopLeague & Bundesliga Manager - New generation online soccer games," in *RoboCup 2010: Robot Soccer World Cup XIV* (E. Chown, A. Matsumoto, P. Plöger, and J. R. del Solar, eds.), vol. 6556 of *Lecture Notes in Computer Science*, pp. 230–241, Springer, 2011.

[7] U. Visser, "The Semantic Web: Introduction and Overview," in *Handbook of Artificial Intelligence (in German)* (G. Görz, C. Rollinger, and J. Schneeberger, eds.), vol. 4. Auflage, p. 92, Oldenbourg, 2011. To appear. Note: written in German. Original title: Das Semantic Web: Einführung und Überblick.

[8] T. Warden, A. Lattner, and U. Visser, "Real-time spatio-temporal analysis of dynamic scenes in 3d soccer simulation," in *RoboCup 2008: Robot Soccer World Cup XII* (L. Iocchi, H. Matsubara, A. Weitzenfeld, and C. Zhou, eds.), Lecture Notes of Artificial Intelligence, Heidelberg: Springer, 2009.

[9] F. Dylla, A. Ferrein, G. Lakemeyer, J. Murray, O. Obst, T. Röfer, S. Schiffer, F. Stolzenburg, U. Visser, and T. Wagner, "Approaching a formal soccer theory from the behavior specification in robotic soccer," in *Computer Science in Sport* (P. Dabnicki and A. Baca, eds.), Bioengineering, London: WIT Press, 2008.

[10] S. Planthaber and U. Visser, "Logfile player and analyzer for robocup 3d," in *RoboCup 2006: Robot Soccer World Cup X* (G. Lakemeyer, E. Sklar, D. Sorrenti, and T. Takahashi, eds.), vol. 4434 of *Lecture Notes in Computer Science*, pp. 426–433, Bremen, Germany: Springer, 2007.

[11] A. Lattner, A. Miene, U. Visser, and O. Herzog, "Sequential pattern mining for situation and behavior prediction in simulated robotic soccer," in *RoboCup 2005: Robot Soccer World Cup IX* (I. Noda, A. Jacoff, A. Bredenfeld, and Y. Takahashi, eds.), vol. 4020 of *Lecture Notes in Computer Science*, pp. 118–129, Osaka, Japan: Springer-Verlag, 2006.

[12] F. Dylla, A. Ferrein, G. Lakemeyer, J. Murray, O. Obst, T. Röfer, F. Stolzenburg, U. Visser, and T. Wagner, "Towards a league-independent qualitative soccer theory for robocup," in *RoboCup 2004: Robot Soccer World Cup VIII* (D. Nardi, M. Riedmiller, C. Sammut, and J. Santos-Victor, eds.), vol. 3276 of *Lecture Notes in Computer Science*, pp. 611–618, Lissabon, Portugal: Springer, 2005.

[13] A. Miene, U. Visser, and O. Herzog, "Recognition and prediction of motion situations based on a qualitative motion description," in *RoboCup 2003: Robot Soccer World Cup*

VII (D. Polani, B. Browning, A. Bonarini, and K. Yoshida, eds.), vol. 3020 of *Lecture Notes in Computer Science*, pp. 77–88, Padua, Italy: Springer-Verlag, 2004.

[14] U. Visser and C. Schlieder, "Modeling real estate transactions: the potential role of ontologies," in *The Ontology and Modelling of Real Property Transactions* (H. Stuckenschmidt, E. Stubkjaer, and C. Schlieder, eds.), International Land Management Series, pp. 99–113, Aldershot, Hants GU11 3HR: Ashgate Publishing Limited, ISBN 0 7546 3287 3, 2003.

[15] U. Visser and H.-G. Weland, "Using online learning to analyze the opponents behavior," in *Proceedings of the RoboCup-2002: Robot Soccer World Cup VI* (G. Kaminka, P. Lima, and R. Rojas, eds.), vol. 2752 of *Lecture Notes in Computer Science*, pp. 78–93, Fukuoka, Japan: Springer Verlag, 2003.

[16] J. Meyer, R. Adolph, D. Stephan, A. Daniel, M. Seekamp, V. Weinert, and U. Visser, "Decision-making and tactical behavior with potential fields," in *Proceedings of the RoboCup-2002: Robot Soccer World Cup VI* (G. Kaminka, P. Lima, and R. Rojas, eds.), vol. 2752 of *Lecture Notes in Computer Science*, pp. 304–311, Fukuoka, Japan: Springer, 2003.

[17] U. Visser, H. Stuckenschmidt, H. Wache, and T. Vögele, "Using environmental information efficiently: Sharing data and knowledge from heterogeneous sources," in *Environmental Information Systems in Industry and Public Administration* (C. Rautenstrauch and S. Patig, eds.), pp. 41–73, Hershey, USA & London, UK: IDEA Group, 2001.

[18] U. Visser, C. Drücker, S. Hübner, E. Schmidt, and H.-G. Weland, "Recognizing formations in opponent teams," in *RoboCup 2000, Robot Soccer World Cup IV* (P. Stone, T. Balch, and G. Kraetschmar, eds.), vol. 2019 of *Lecture Notes in Computer Science*, pp. 391 – 396, Melbourne, Australia: Springer-Verlag, 2001.

[19] U. Visser, A. Tickle, R. Hayward, and R. Andrews, "Rule-extraction from trained neural networks: Different techniques for the determination of herbicides for the plant protection advisory system pro_plant," in *Rules and Networks* (J. Diederich and R. Andrews, eds.), Proceedings of the Rule Extraction From Trained Artificial Neural Networks Workshop, Brighton, UK, pp. 133–139, Brisbane: QUT, Society for the Study of Artificial Intelligence and Simulation of Behavior, 1996.

Refereed Conference Papers

[1] C. Rachuy and U. Visser, "Behavior-analysis and -prediction for agents in real-time and dynamic adversarial environments," in *Proceedings of the 19th European Conference on Artificial Intelligence - ECAI 2010, to appear*, 2010.

[2] S. Hübner and U. Visser, "Temporal representation and reasoning for the semantic web," in *21st international FLAIRS conference* (C. Lane and D. Wilson, eds.), (Coconut Grove, FL, USA), pp. 113–114, AAAI Press, 2008.

[3] C. Waldmann, U. Visser, M. Diepenbroek, and U. Schindler, "Semantic infrastructure for marine geosensor networks," in *Geosensornetzwerke - von der Forschung zur praktischen Anwendung* (C. Brox, A. Krüger, and I. Simonis, eds.), vol. 23, (Münster), pp. 127–133, Institut für Geoinformatik, Universität Münster, 2005.

[4] T. Wagner, U. Visser, O. Herzog, and A. Lattner, "Qualitative egocentric updating for autonomous mobiles," in *5th IFAC Symposium on Intelligent Autonomous Vehicles*, (Lisbon, Portugal), Elsevier Science, 2004.

[5] A. Miene, A. Lattner, U. Visser, and O. Herzog, "Dynamic-preserving qualitative motion description for intelligent vehicles," in *IEEE Intelligent Vehicles Symposium*, (Parma, Italy), pp. 642–646, IEEE, 2004.

[6] T. Vögele, R. Spittel, U. Visser, and S. Hübner, "GeoShare ? building a transnational geodata infrastructure for the North Sea region," in *Geodaten- und Geodienste-Infrastrukturen - von der Forschung zur praktischen Anwendung* (L. Bernard, A. Sliwinski, and K. Senkler, eds.), vol. 18 of *IFGI prints*, (Münster, Germany), pp. 1–15, IFGI Press, 2003.

[7] T. Vögele, C. Schlieder, and U. Visser, "Intuitive modelling of place name regions for spatial information retrieval," in *Spatial Information Theory: Foundations of Geographic Information Science (COSIT)*, LNCS 2825, (Ittingen, Switzerland), pp. 239–252, Springer, 2003.

[8] H. Wache, U. Visser, and T. Scholz, "Ontology construction - an iterative and dynamic task," in *Florida Artificial Intelligence Research Society Conference (FLAIRS)* (S. Haller and G. Simmons, eds.), (Pensacola, FL, USA), pp. 445–449, AAAI press, 2002.

[9] U. Visser, T. Vögele, and C. Schlieder, "Spatio-terminological information retrieval using the BUSTER system," in *EnviroInfo* (W. Pillmann and K. Tochtermann, eds.), vol. 1 of *Environmental Communication in the Information Society*, (Vienna), pp. 93–100, Berger Druck, Horn, Austria, 2002.

[10] U. Visser, H. Stuckenschmidt, and C. Schlieder, "Interoperability in GIS - enabling technologies," in *5th AGILE Conference on Geographic Information Science* (M. Ruiz, M. Gould, and J. Ramon, eds.), (Palma de Mallorca, Spain), pp. 291–297, Universitat de les Illes Balears, 2002.

[11] H. Stuckenschmidt, T. Vögele, U. Visser, and R. Meyer, "Intelligent brokering of environmental information with the BUSTER system," in *In: Information Age Economy: Proceedings of the 5th International Conference 'Wirtschaftsinformatik'*, (Ulm, Germany), pp. 15–20, Physica-Verlag, 2001.

[12] H. Stuckenschmidt, C. Schlieder, U. Visser, T. Vögele, and H. Neumann, "Spatial reasoning for information brokering," in *Florida Artificial Intelligence Research Society Conference (FLAIRS)* (I. Russell and J. Kolen, eds.), (Key West, FL), pp. 568 – 573, AAAI Press, 2001.

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[14] H. Neumann, G. Schuster, H. Stuckenschmidt, U. Visser, and T. Vögele, "Intelligent brokering of environmental information with the BUSTER system," in *International Symposium Informatics for Environmental Protection* (L. M. Hilty and P. W. Gilgen, eds.), vol. 30 of *Umwelt-Informatik Aktuell*, (Zürich, Switzerland), pp. 505–512, Metropolis, 2001.

[15] T. Vögele, H. Stuckenschmidt, and U. Visser, "Towards intelligent brokering of geo-information," in *Urban and Rural Data Management (UDMS)*, (Delft), pp. 135–142, Electronic, 2000.

[16] T. Vögele, H. Stuckenschmidt, and U. Visser, "Buisy - using brokered data-objects for environmental information systems," in *Hypermedia im Umweltschutz* (K. Tochtermann and W.-F. Rieckert, eds.), vol. 24 of *Umwelt-Informatik aktuell*, (Ulm, Germany), pp. 68–73, Metropolis-Verlag, 2000.

[17] H. Stuckenschmidt and U. Visser, "Semantic translation based on approximate re-classification," in *International Conference on Principles of Knowledge Representation and Reasoning*, (Breckenridge), pp. 110–118, 2000.

[18] U. Visser, R. Nayak, and M. T. Wong, "Rule extraction from trained neural networks and connectionist knowledge representation for the determination of pesticide mixtures," in *Connectionist Systems for Knowledge Representation and Deduction* (T. Downes, ed.), Proceedings of the Australian Conference of Neural Networks (ACNN 98), (Brisbane), pp. 138–142, University of Queensland Press, 1998.

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Refereed Workshop & Symposium Papers

[1] S. Abeyruwan, U. Visser, S. Schuerer, and V. Lemmon, "PrOntoLearn: Using Lexico-Semantic Ontology Generation using Probabilistic Methods," in *Workshop on Uncertainty Reasoning for the Semantic Web at the 9th International*

Semantic Web Conference, ISWC 2010 (F. Bobillo, R. Carvalho, P. C. G. D. Costa, C. D'Amato, N. Fanizzi, K. B. Laskey, K. J. Laskey, T. Lukasiewicz, T. Martin, M. Nickles, and M. Pool, eds.), Proceedings Of The 6th International Workshop On Uncertainty Reasoning For The Semantic Web (URSW 2010), (http://people.csail.mit.edu/pcm/tempISWC/workshops/URSW2010/index.html), pp. 25–36, October 2010.

[2] U. Visser and C. Lisetti, "Avatars in a modern soccer manager," in *Proceedings of the ARDE workshop at AAMAS 2010* (W. van der Hoek, G. A. Kaminka, Y. Lespérance, M. Luck, and S. Sen, eds.), vol. 1, pp. 12–20, International Foundation for Autonomous Agents and Multiagent Systems, ACM Digital Library, 2010.

[3] U. Visser, G. Lakemeyer, M. Veloso, and G. Vachtesevanos, *Proceedings of IJCAI-05 Workshop on Agents in Real-Time and Dynamic Environments.* IJCAI, 2005.

[4] U. Visser, H.-D. Burkhard, P. Doherty, and G. Lakemeyer, *Proceedings of ECAI-04 Workshop on Agents in dynamic and real-time environments.* ECAI, 2004.

[5] F. Dylla, A. Ferrein, G. Lakemeyer, J. Murray, O. Obst, T. Röfer, F. Stolzenburg, U. Visser, and T. Wagner, "Towards a league-independent qualitative soccer theory for roboCup," in *Workshop Methods and Technology for Empirical Evaluation of Multi-agent Systems and Multi-robot Teamsät KI-2004* (H. Utz, F. Stulp, and B. Nebel, eds.), (Ulm, Germany), 2004. Extended version.

[6] T. Wagner, U. Visser, and O. Herzog, "Egocentric qualitative spatial knowledge representation for physical robots," in *AAAI Spring Symposium* (C. Schlenoff and M. Uschold, eds.), (Stanford, CA), pp. 9–16, AAAI Press, Technical Report SS-04-04, 2004.

[7] T. Wagner, C. Schlieder, and U. Visser, "An extended panorama: Efficient qualitative spatial knowledge representation for highly dynamic environments," in *IJCAI-03 Workshop on Issues in Designing Physical Agents for Dynamic Real-Time Environments: World modelling, planning, learning, and communicating* (U. Visser, P. Doherty, G. Lakemeyer, and M. Veloso, eds.), (Acapulco, Mexico), pp. 109–116, AAAI Press, 2003.

[8] U. Visser, P. Doherty, G. Lakemeyer, and M. Veloso, eds., *Proceedings of IJCAI-03 Workshop on Issues in Designing Physical Agents for Dynamic Real-Time Environments: World modelling, planning, learning, and communicating.* Acapulco, Mexico: AAAI Press, 2003.

[9] U. Visser and G. Schuster, "Finding and integration of information - a practical solution for the semantic web -," in *ECAI 02, Workshop on Ontologies and Semantic Interoperability* (J. Euzénat, A. Gomez-Perez, N. Guarino, and H. Stuckenschmidt, eds.), (Lyon, France), pp. 73–78, ECCAI, 2002.

[10] H. Wache, T. Vögele, U. Visser, H. Stuckenschmidt, G. Schuster, H. Neumann, and S. Hübner, "Ontology-based integration of information - a survey of existing approaches," in *IJCAI-01 Workshop: Ontologies and Information Sharing* (A. G. Pérez, M. Grüninger, H. Stuckenschmidt, and M. Uschold, eds.), (Seattle, WA), pp. 108–117, 2001.

[11] H. Stuckenschmidt, H. Wache, T. Vögele, and U. Visser, "Enabling technologies for interoperability," in *Workshop on Information Sharing: Methods and Applications at the 14th International Symposium of Computer Science for Environmental Protection* (U. Visser and H. Pundt, eds.), vol. 20, (Bonn), pp. 35–46, TZI, 2000.

[12] C. Drücker, S. Hübner, E. Schmidt, U. Visser, and H.-G. Weland, "Virtual werder: Using the online-coach to change team formations," in *4th International Workshop on RoboCup* (T. Balch, P. Stone, and G. Kraetschmar, eds.), (Melbourne, Australia), pp. 217–222, Carnegie Mellum University Press, 2000.

[13] U. Visser and H. Pundt, "Workshop: Intelligent methods in environmental protection: Special aspects of processing in space and time," in *13. International Symposium of Computer Science for Environmental Protection*, vol. 5 of *Forschungsberichte des Studiengangs Informatik/Mathematik der Univeristät Bremen*, (Magdeburg, Germany), p. 126, University of Bremen, 1999.

[14] H. Stuckenschmidt, U. Visser, G. Schuster, and T. Vögele, "Ontologies for geographic information integration," in *Workshop Ïntelligent Methods in Environmental Protection: Special Aspects of Processing in Space and Time", 13. International Symposium of Computer Science for Environmental Protection (CSEP '99)* (U. Visser and H. Pundt, eds.), vol. 5 of *Research reports of the Department of Mathematics and Computer Science, University of Bremen*, pp. 81–107, University of Bremen, 1999.

[15] K. Brinkkötter-Runde and U. Visser, "Wearable computing, wireless communication and knowledge discovery for mobile data and analysis," in *International Workshop on Mobile Mapping Technology*, (Bangkok, Thailand), pp. 123–131, 1999.

[16] R. Conrad and U. Visser, "Das Konzept und die Technologien des Internet-basierten Bremer Umweltinformationssystems," in *Umweltinformatik*, Proceedings of the Workshop Hypermedia im Umweltschutz, (Marburg), pp. 132–142, Metropolis-Verlag, 1998.

Unrefereed Publications

[1] S. Abeyruwan, C. Chung, N. Dakar, F. Gayanilo, A. Koleti, V. Lemmon, C. Mader, M. Ogihara, D. Puram, K. Sakurai, R. Smith, U. Vempati, S. Venkataouram, U. Visser, and S. Schürer, "BAOSearch: A Semantic Web Application for Biological Screening and Drug Discovery Research." Electronic document, http://www.cs.vu.nl/p̃mika/swc/submissions/swc2010_submission_20.pdf, October 2010,.

[2] S. Abeyruwan, V. Diaz, A. Locay, N. Sneij, A. Seekircher, J. Stoecker, and U. Visser, "RoboCanes - Team Description Paper," in *RoboCup 2010: Robot Soccer World Cup XIV*, 2010.

[3] U. Visser, "RoboCup 2007, RoboCup WM in Atlanta," *KI - Künstliche Intelligenz*, vol. 21, no. 4, pp. 76–77, 2007.

[4] A. D. Lattner, C. Rachuy, A. Stahlbock, U. Visser, and T. Warden, "Virtual Werder 3D Team Documentation," Technical report 36, TZI, Center for Computing Technologies, September 2006.

[5] L. Bernard, U. Einspanier, S. Haubrock, S. Hübner, E. Klien, W. Kuhn, R. Lessing, M. Lutz, and U. Visser, "Ontology-based discovery and retrieval of geographic information in spatial data infrastructures," *Geotechnologien Science Report*, vol. 2004, no. 4, pp. 15–29, 2004.

[6] U. Visser and S. Hübner, "Temporal representation and reasoning for the semantic web," Technical report TZI-Bericht Br. 28, TZI, Center for Computing Technologies, 2003.

[7] L. Bernard, S. Haubrock, S. Hübner, R. Lessing, M. Lutz, and U. Visser, "Semantic interoperability by means of geoservices," in *Geotechnologien Science Report* (F. M. for Education and G. R. C. D. Research (BMBF), eds.), vol. 2, (Hannover), BMBF & DFG, 2003.

[8] U. Visser and H. Pundt, "Information sharing: Methods and applications," Technical TZI-Bericht Nr. 20, TZI, Center for Computing Technologies, 2000.

[9] H. Stuckenschmidt, H. Wache, T. Vögele, and U. Visser, "Enabling technologies for interoperability," in *Workshop: Information Sharing: Methods and Applications at the 14th International Symposium of Computer Science for Environmental Protection* (U. Visser and H. Pundt, eds.), vol. 20, (Bonn), pp. 35–46, TZI, 2000.

[10] I. Timm, P. Knirsch, M. Petsch, U. Visser, K. Fischer, O. Herzog, S. Kirn, and S. Zelewski, "Agententechnologie - Multiagentensysteme in der Informationslogistik und wirschaftswissenschaftliche Perspektiven der Agenten-Konzeptionalisierung," Conference Workshop Proceedings TZI-Bericht 16, TZI, University of Bremen, 1999.

[11] K. Brinkkötter-Runde and U. Visser, "Wearable computing, wireless communication and knowledge discovery for mobile data and analysis," in *International Workshop on Mobile Mapping Technology*, (Bangkok, Thailand), pp. 123–131, 1999.

[12] R. Conrad and U. Visser, "Das Konzept und die Technologien des Internet-basierten Bremer Umweltinformationssystems," in *Umweltinformatik*, Proceedings of the Workshop Hypermedia im Umweltschutz, (Marburg), pp. 132–142, Metropolis-Verlag, 1998.

[13] U. Visser, "Neuronale Netze in der Herbizidberatung," Technical report, WWU-IFA-10/95-1, in: Proceedings to the PRO_PLANT-conference, Universität Münster, October 1995.

Dissertation & Habilitation

[1] U. Visser, *Development and application of neural networks within the framework of the rule-based plant protection advisory system PRO_PLANT*. Phd-thesis, Faculty of Mathematics and Natural Science, Westfälische Wilhelms-Universität Münster, 1995. 158 pages.
Please note: Thesis is written in German. Original title: Entwicklung und Anwendung neuronaler Netze im Rahmen des Pflanzenschutz-Beratungssystems PRO_PLANT.

[2] U. Visser, *Intelligent Information Integration for the Semantic Web*. Habilitation by thesis, Department of Mathematics and Computer Science, University of Bremen, 12 2003. 267 pages.
Please note: Obtaining a habilitation in Germany is equivalent to obtaining tenure in the US.

Invited seminars, keynotes and press interviews

- *Knowledge Representation and Reasoning for Multiagent Systems and Semantic Web Applications* . Host: University of Miami, Computer Science Department, October 2011.
- *Background Knowledge for inductive Learning Algorithms - Importance, Problems, Perspectives*. Host: University for Applied Sciences, Schmalkalden, Germany, May 2011.
- *AI and Games*. Host: University for Technology and Economy, HTW Berlin, Department of Media Informatics, December 2010.
- *Statistics-based Real-Time Sports Simulation*. Host: Singapore Polytechnic, Robotics Lab (Prof. Changjiu Zhou), December 2009.
- *Motion Capture for Real-Time Sports Simulation*. Host: Florida International University, Computer Science, USA, November 2009.
- *Statistics-based MAS for Real-Time Sports Simulation*. Host: UT Austin, Computer Science, USA, October 2009.
- *Artificial Intelligence and Robotics for Soccer playing Agents*. Host: Lions Club Bremen, Germany, December 2008.
- *AI, Robotics and Philosophy: Can autonomous robots be held liable for their actions?*. Interview with FAZ (Frankfurt Allgemeine Zeitung), Germany, July 2008.
- *AI techniques for autonomous systems*. Lecture within an AI course. Host: Florida International University, Computer Science Department, January 2008.
- *AI and Robotics as emerging Technologies*. Interview with TV station 'Center-TV', January 2008.
- *New curricula in high schools necessary?*. Interview with Magazine 'Elektor' (Note: Elektor is one of the oldest German Magazines in the electronic area in Germany), November 2007.
- *Autonomous robots: solving problems in real-time, dynamic, and adversarial environments*. Host: Department of Ocean Engineering, Florida Atlantic University, USA, November 2007.
- *Problem-solving for autonomous agents in real-time, dynamic, and adversarial environments*. Host: School of Computing and Information Sciences , Florida International University, USA, November 2007.
- *Soccer-playing robots: solving problems in real-time, dynamic, and adversarial environments*. Host: Department of Computer Science, University of Miami, USA, October 2007.
- *Autonomous soccer robots for AI games*. Interview with c't Magazine (Note: c't is the largest Computer Magazine in Europe), July 2007.
- *Artificial Intelligence and Robotics for Soccer playing Agents*. Host: Daimler-Chrysler Plant Bremen, 25.000 visitors at open day, June 2007.
- *Science and Living in Bremen*. Interview within the official state election TV -Show in Bremen. Host: ZDF - German Television, May 2007.
- *Artificial Intelligence and Robotics for Soccer playing Agents*. Host: Executive Board, RWE-Group (North-Rhine Westfalian Electricity group), March 2007.
- *Motion detection and prediction in dynamic and real-time environments*. Host: Technical University of Chemnitz, Germany, January 2007.
- *Robotics and AI - An attempt to evaluate future perspectives from 20 years of experience*. Host: Fraunhofer Institute IAIS, Bonn, November 2006.
- *World-Class Science meets World-Class Soccer*. 4 continuous Live-Interviews within

the TV - Show 'RoboCup', Host: ZDF - German Television, June 2006.

- *RoboCup-WorldCup - Mobile Robots on the way in our society?*. 2 Live-Interviews within the TV - Show 'Buten & Binnen', Host: ARD German Television (Bremen), June 2006.
- *RoboCup-WorldCup for soccer-playing robots*. Live-Interview within the Radio - Broadcast 'Schlager'. Host: NDR Norddeutscher Rundfunk, June 2006.
- *Robots act in niche markets*. Host: Interview (among others) with the national newspaper 'Handelsblatt', June 2006.
- *RoboCup-WorldCup*. Live-Interviews within the TV - Show 'DW-World', Host: Deutsche Welle (World), Interview in German and English, June 2006.
- *RoboCup*. Interviews with the career magazine 'Karriere'. Host: Verlagsgruppe Handelsblatt GmbH, May 2006.
- *Artificial Intelligence and Robotics for Soccer playing Agents*. Host: Bremen Industry Club, May 2006.
- *RoboCup - an Introduction to AI and Robotics*. Host: Association Media & IT, April 2006.
- *RoboCup - an alternative soccer World Cup*. Host: TV-Interview with the ARD (First German Television), Show: ARD Ratgeber Technik, May 2006.
- *Soccer players with feet made out of steel*. Interview with the 'Berliner Zeitung', May 2006.
- *RoboCup - mobile soccer-playing robots*. Host: Radio-Interview, ARD-Studio Bremen (ARD: First German Television), April 2006.
- *World-Class Science meets World-Class Soccer*. Live-Interview within the TV - Show 'News', Host: ZDF - German Television, March 2006.
- *RoboCup - AI and Robotics*. Host: State Government of the state of Bremen, CeBIT, March 2006.
- *Robotics Initiative - AI and Robotics at the TZI*. Host: Industry Chamber and State Government of Bremen, February 2006.
- *Artificial Intelligence and Robotics for Soccer playing and Rescue Scenarios*. Host: Europe-Asian Legal and Medical Conference, January 2006.
- *Semantics for intelligent Geo-Information Processing* (in German). Host: Technical University of Dresden, Germany, November 2005.
- *RoboCup: Kǹstliche Intelligenz & Robotik für Fußball- und Rettungsroboter*. Host: Association of German Engineers, Region North-West, November 2005.
- *Mobile robots in dynamic environments - Space and Time issues*. Host: University of Münster, Department of Geo-Informatics, Germany, October 2005.
- *2050 soll ein Roboter-Team den Fußball-Weltmeister besiegen*. Interview for the Magazine 'Highlights' of the University of Bremen, September 2005.
- *Intelligent tools for the Semantic Web based on qualitative modeling*. Host: Universität Stuttgart, Department of Computer Science, September 2005.
- *In der Robotik sind acht Jahre Welten* (in German). Interview for science online (spektrumDirekt), August 2005.
- *Why play soccer with robots* (in German). Interview for students in high schools, University of Bremen, June 2005.
- *Outdoor mobile robots*. Host: Federal Ministry for Education and Research (BMBF), April 2005.
- *AI and Robotics - Mobile soccer-playing robots*. Host: State Government of the state of Bremen, Hanover Fair Industry, April 2005.
- *Semantics as fundamental basis for processing Geodata* (in German). Host: German

Research Council (Round table for future work programs), February 2005.

- *RoboCup - Artificial Intelligence for Soccer-playing dogs.* Host: Forum Robotics in Progress, Daimler Chrysler, Bremen, February 2005.
- *The other WorldCup - RoboCup 2006 in Bremen* (in German). Interview for the Magazine 'The Specialist', January 2005.
- *Egocentric Qualitative Spatial Knowledge Representation Based on Ordering Information for Physical Robot Navigation.* Host: Osaka University, School of Engineering, November 2004.
- *Intelligent tools for the Semantic Web based on qualitative modeling.* Host: University of Weimar, Germany, Department of Computer Science, Portugal, July 2004.
- *Intelligent tools for the Semantic Web based on qualitative modeling.* Host: Instituto Superior Tecnico, Lisbon Technical University, Portugal, July 2004.
- *Intelligent tools for the Semantic Web based on qualitative modeling.* Host: University of Innsbruck, Department of Computer Science, Austria, June 2004.
- *Web-Development: Intelligent tools for the Semantic Web based on qualitative modeling.* Tutorial, Host: World Wide Web Consortium, May 2004.
- *Intelligent Information Integration for the Semantic Web.* Host: Sohar University, Oman (quality controlled by University of Queensland, Australia), March 2004.
- *concept@location in time - A new query type for the Semantic Web.* Host: Lund University, Scandinavian AI Conference, Lund, Sweden, March 2004.
- *Ontology-based Information Integration for the Semantic Web.* 2-Day Tutorial. Host: Lund University, Scandinavian AI Conference, Lund, Sweden, March 2004.
- *Intelligent Information Integration for the Semantic Web.* 2-Day Tutorial. Host: German Society for Computer Science, Interdisciplinary College (IK '04), Günne, Germany, March 2004.
- *Artificial Intelligence and Robotics for Soccer playing and Rescue Scenarios.* Host: Europe-Asian Legal and Medical Conference, Cortina d' Ampezzo, Italy, January 2004.
- *Ontology-based information integration.* 1-Day Tutorial. Host: ISWC, November 2003.
- *Ontology-based information integration.* 1-Day Tutorial. Host: IJCAI, August 2003.
- *Intelligent Information Integration for the Semantic Web.* Host: International Quality Network (IQN), University of Bremen, May 2003.
- *Werkzeuge f̈r das Semantic Web: Ein neuer Typ von intelligenter Suche (concept@location in time).* Host: Unversity of Applied Science (FH Harz, Werningerode, Germany), January 2003.
- *Semantic Web Challenge.* (Together with M. Klein from VU Amsterdam). Host: EKAW-Chairs, Siguenza, Spain, October 2002.
- *Ontology-Based Information Integration.* Tutorial on the 13th International Conference on Knowledge Engineering and Knowledge Management EKAW 2002 in cooperation with AAAI.
- *Roboterfußball: Was kann die Künstliche Intelligenz leisten?.* Host: Sport and Games Symposium, Bremen, September 2002.
- *Artificial Intelligence and Robotics for Soccer playing and Rescue Scenarios.* Host: Europe-Asian Legal and Medical Conference, Cortina d' Ampezzo, Italy, January 2002.
- *BUSTER - A Middleware for Ontology-based Integration of Information.* Host: International University Bremen (now: Jacobs University Bremen), December 2001.
- *Methodologies for Ontology-Based Semantic Translation.* Host:, October 2001.

- *Portal of Geodata for Bremen - Future Options.* Host: Senator for Environmental Affairs, State of Bremen, Germany, June 2001.
- *Environmental Management Systems for Cost-Optimization in Industry.* Host: Carl Duisberg Society, March 2001.
- *Plant Protection Advisory System PRO_PLANT.* Host: The University of Queensland, Brisbane, Department of Computer Science, Australia. September 2000.
- *'Virtual Werder' at the RoboCup-WorldCup.* Host: Humboldt-University Berlin, Department of Computer Science, June 2000.
- *'Virtual Werder' goes for the World Cup.* Host: TV-Interview with SAT1-German Television, May 2000.
- *Mobile software robots: 'Virtual Werder'.* Host: TV-Interview with RTL-German Television, April 2000.
- *Image Processing for Textil-Machines.* Host: Schlafhorst GmbH, Mönchengladbach, Germany, February 2000.
- *Applied Computer Science in the areas of Environment, Production, and Logistics.* Host: University of Münster, Department of Geo-Informatics, Germany, January 2000.
- *Wearable Computer, Future or Toys?.* Host: Hammer RC, Hamm, Germany, November 1999.
- *Coordination of material flow in international production networks.* Host: Lear Corporation, Bremen, December 1998.
- *Determination of pesticide mixtures: Rule extraction from trained neural networks and symbolic induction algorithms: A comparison.* Host: University of Bremen, Department of Computer Science, Germany, September 1998.
- *Computer supported analysis and assessment in production processes.* Host: European Research Project 'IndAqua' (ESPRIT Project 26240), Brussels, Belgium, May 1998.
- *Information Warehousing and Mining.* Host: International Wearable Computing Conference, talk in technical session, Washington DC, USA, May 1998.
- *Environmental protection with the help of the plant protection expert system PRO_PLANT.* Host: German AI Conference, Hamburg, Germany, September 1993.

Professional Activities

Event coordination

- **Co-Chair**, AAMAS workshop on *Agents in Dynamic and Real-Time Environments*, May 2010.
- **Co-Chair and head of committee**, RoboCup Symposium, July 2007.
- **General Co-Chair and Head of Organizing Committee**, RoboCup World Championships, June 2006.
- **Program Co-Chair**, Web Intelligence, December 2006.
- **Chair**, ISWC (International Semantic Web Conference), *Semantic Web Challenge*, November 2005.
- **Vice-Chair**, Web Intelligence, September 2005.
- **Chair**, IJCAI workshop on *Agents in Dynamic and Real-Time Environments*, August 2005.
- **Chair**, ECAI workshop on *Agents in Dynamic and Real-Time Environments*, August 2004.

- **Co-Chair**, ISWC, *Semantic Web Challenge*, November 2004.
- **Co-Chair**, Workshop at German Computer Science & AI Conference: *Semantic Web Services and Dynamic Networks*, September 2004.
- **Chair**, IJCAI workshop on *Issues in Designing Physical Agents for Dynamic Real-Time Environments: World modeling, planning, learning, and communicating*, August 2003.
- **Co-Chair**, ISWC, *Semantic Web Challenge*, November 2003.
- **Chair**, ECAI workshop on *Ontologies and Semantic Interoperability*, August 2002.
- **Chair**, IJCAI workshop on *Ontologies and Information Sharing*, August 2001.
- **Chair**, CSEP (Computer Science for Environmental Protection) workshop on *Information Sharing*, September 2000.
- **Chair**, CSEP workshop on *Intelligent methods in environmental informatics; special aspects of time and space*, September 1999.
- **Co-Chair**, German AI conference workshop on *Agent technologies*, September 1999.
- **Exhibition-Chair**, German AI conference and CSEP, September 1998.
- **Exhibition-Co-Chair**, CeBIT (two exhibits, CeBIT is the worlds largest IT-Fair), March 1998.
- **Co-Chair**, German Computer Science conference (GI), workshop on *Environmental planning and computer science*, September 1997.
- **Exhibition-Co-Chair**, Agritechnica (the world largest exhibition in agricultural products), plant protection expert system PRO_PLANT, September 1995.
- **Exhibition-Co-Chair**, CeBIT, plant protection expert system PRO_PLANT, March 1994.
- **Exhibition-Co-Chair**, Agritechnica, plant protection expert system PRO_PLANT, September 1993.

Guest Editor

- **Supervising editor**, German Journal on AI, Special Issue on "SLAM", Spring 2010.
- **Supervising editor**, German Journal on AI, Special Issue on "Humanoid robots", Fall 2008.
- **Guest Co-editor**, German Journal on AI, Special Issue on "RoboCup", March 2006.
- **Guest editor**, IEEE Intelligent Systems, Special Issue on "Semantic Web Challenge", May 2004.
- **Guest editor**, German Journal on AI, Special Issue on "Semantic Web", March 2003.

Member of Executive Boards

- **Trustee** of the RoboCup Federation, 2006-present, re-elected in 2009 for 2nd term until 2012.
- **Executive Member** of the Media & IT Association (State of Bremen), August 2007 - August 2008.
- **Executive Member** of the RoboCup Federation, 2003-2006.
- **Co-Speaker** of the German RoboCup Association (Arbeitskreis RoboCup), 2003-present.

Advisory Committee Member

- RoboCup World Championships, Suszhou 2008, Graz 2009, Singapore 2010, Istanbul 2011, Mexico City 2012
- International Journal on Semantic Web and Information Systems (IJSWIS), since 2004

Book Reviewer

- Springer, 2005-2007.
- Ashgate Publishing Limited, 2003.

Journal Reviewer

- Journal of Intelligent & Robotic Systems (JINT).
- Autonomous Agents and Multi-Agent Systems (JAAMAS).
- IEEE Transactions on Neural Systems & Rehabilitation Engineering.
- Journal of Web Semantics (JWS).
- Information Science (INS).
- Computers & Geosciences (C&G).
- International Journal of Geographical Information Science (IJGIS).

Member of Scientific Committees

- Humanoid Soccer Robots WS on Humanoids 2011 Conference, November 2011.
- International Semantic Web Conference (ISWC), October 2011.
- RoboCup Symposium, July 2011.
- Autonomous Agents and Multiagent Systems (AAMAS), May 2011.
- Humanoid-Soccer-Workshop, Humanoids, December 2010.
- Prestigious Applications of Intelligent Systems (PAIS), August 2010.
- RoboCup Symposium, July 2010.
- Workshop Practical Cognitive Agents and Robots on AAMAS, May 2010
- Workshop Agents in Real-time and Dynamic Environments on AAMAS, May 2010
- Florida AI Research Society (FLAIRS), May 2010.
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS), May 2010.
- RoboCup Symposium, July 2009.
- BMI workshop (Künstliche Intelligenz, KI), September 2009.
- European Semantic Web Conference (ESWC), June 2009.
- Florida AI Research Society (FLAIRS), May 2009.
- International Semantic Web Conference (ISWC), Semantic Web Challenge, November 2008.
- Workshop on 'Universe of RoboCup Simulators' on the International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR), November 2008.
- European Semantic Web Conference (ESWC), June 2008.
- RoboCup Symposium, June 2008.
- Florida AI Research Society (FLAIRS), May 2008.
- Human-Robot Interaction (HRI), March 2008 (reviewer)
- German AI Conference (KI), September 2001, 2007.

- Wirtschaftsinformatik (Computer Science in Business and Economy), September 2007.
- Geoinformatics Days (GI-Days), September 2007.
- RoboCup Symposium, June 2007.
- Florida AI Research Society (FLAIRS), May 2007.
- International Semantic Web Conference, November 2006.
- International Semantic Web Conference, Semantic Sensor Networks Workshop, November 2006.
- International Symposium on Practical Cognitive Agents and Robots (PCAR), November 2006.
- Semantic Sensor Networks Workshop at ISWC, November 2006.
- Brazilian AI Conference, workshop on ontologies and their applications (WONTO), October 2006.
- German AI Conference (KI), September 2006.
- Portuguese Conference on Artificial Intelligence, Workshop Building and Applying Ontologies for the Semantic Web, December 2005.
- Conference on Information and Knowledge Management (CIKM), Knowledge Management, November 2005.
- European Semantic Web Conference (ESWC), August 2006.
- Florida AI Research Society (FLAIRS), May 2006.
- Web Intelligence (WI), Semantic Web Track, September 2005.
- Geoinformatics Days (GI-Days), September 2005.
- German Computer Science Society (GI), Sensor Web Workshop, September 2005.
- German AI Conference (KI), September 2005.
- COST-Workshop, European Cooperation in the Field of Scientific and Technical Research, Intelligent Land-Transactions, September 2005.
- European Semantic Web Conference (ESWC), Demo and Poster Session, August 2005.
- Florida AI Research Society (FLAIRS), May 2005.
- RoboCup Symposium, July 2005.
- ECAI Workshop SIMIS: Semantic Intelligent Middleware for Interoperable Systems, August 2004.
- Brazilian AI Conference (in conjunction with IBERAMIA), October 2004.
- Workshop Methods and Technology for Empirical Evaluation of Multi-agent Systems and Multi-robot Teamsät the German AI conference (KI), September 2004.
- ISWC workshop on Practical and Scalable Semantic Systems, November 2003.
- Geoinformatics Days (GI-Days), September 2003.
- IJCAI workshop on Ontologies and Distributed Systems, August 2003.
- Florida AI Research Society (FLAIRS), Special Track on Semantic Web, May 2003.
- ECAI workshop on Ontologies and Semantic Interoperability, August 2002.
- Hypermedia in Environmental Protection (HU/EML), October 2001.
- IJCAI workshop on Ontologies and Information Sharing, August 2001.
- CSEP (Computer Science for Environmental Protection) workshop on *Information Sharing*, September 2000.
- AWAPAP, Inaugural Australian Workshop on the Application of Artificial Intelligence to Plant and Animal Production, December 1999.
- German AI Conference (KI), workshop on Intelligent methods in environmental informatics; special aspects of time and space, September 1999.
- German AI Conference (KI), workshop on Agent technologies, September 1999.

- CSEP (Computer Science for Environmental Protection), September 1998.
- German Computer Science Society (GI), Workshop Spatial planning and environmental informatics, September 1997.
- AK IWU, Workshop Computer Science and Environmental Protection, 1991.

Research Grant Expert Reviewer

- European Commission, Brussels, FP7-ICT-Call 5, Challenge 4.2, Cultural Heritage & Technology Enhanced Learning, 2009.
- European Commission, Brussels, FP7-ICT-Call 3, Challenge 4.3, Cultural Heritage & Technology Enhanced Learning, 2008.
- European Commission, Brussels, FP7-ICT-Call 1, Cultural Heritage & Technology Enhanced Learning, 2007.
- European Commission, Brussels, FP6-ICT-Call 5, Learning and Cultural Heritage, 2005.
- NASA Research Proposals, Intelligent Systems Project, 2003.
- Netherlands Organization for Scientific Research (NWO), 2003.

Teaching, Mentoring and Service

Teaching

- **Research Associate Professor** at the University of Miami: teaching since Fall 2008.

- CSC 688	*Artificial Intelligence/Machine Learning*, Spring 2011.
- CSC 401/403	*Computer Science Practicum III*, Spring 2011, Spring 2010, Fall 2011, 2010, 2009.
- CSC 545	*Artificial Intelligence*, Spring 2011, Fall 2009.
- CSC 519	*Programing Languages*, Fall 2011, 2010, 2009, 2008.
- CSC 329	*Games programming*, Spring 2010, 2009.
- CSC 322	*Unix and C*, Spring 2009.
- CSC 598/CSC 688	*Semantic Web*, Fall 2011, 2008, Spring 2010.
- CSC 410/411/412	*Students projects*, Fall 2010, 2008, Spring 2010.

- **Privatdozent and Assistant Professor** at the University of Bremen: 2004-2008.
  - CS 03-05-H-902.60   *Collegiate project*[1] *B-Human*, Fall 2007.
  - CS 03-05-H-902.50   *Collegiate project B-Smarter*,
    Fall 2006, Spring 2007, Fall 2007.
  - CS 03-05-H-902.21   *Collegiate project B-Smart*,
    Fall 2004, Spring 2005, Fall 2005, Spring 2006.
  - CS 03-05-H-902.28   *Collegiate project Bremen Byters*,
    Fall 2004, Spring 2005, Fall 2005, Spring 2006.
  - CS 03-902.03   *Collegiate project RoboCup II*,
    Fall 2002, Spring 2003, Fall 2003, Spring 2004.
  - CS 03-710.02   *Artificial Intelligence II (Knowledge acquisition and knowledge representation)*, Spring 2004.
  - CS 03-798   *Collegiate project RoboCup*,
    Fall 2000, Spring 2001, Fall 2001, Spring 2002.
  - GEO 19-   *AI-Applications in the Geosciences*, University of Münster, Spring 2000.
  - CS 03-774   *Modeling*, Spring 2000.

- **Assistant Professor** at the University of Bremen: 1998-2003.
  - CS 03-771   *Artificial Intelligence I (Foundations of knowledge representation and knowledge processing)*, Fall 1998, Fall 1999, Fall 2000, Fall 2002, Fall 2003.
  - CS 03-771   *Artificial Intelligence II (Knowledge acquisition and knowledge representation)*, Spring 1999, Spring 2000, Spring 2001, Spring 2003.
  - CS 03-x   *Multi-agent systems for the RoboCup*, Fall 1999.
  - CS 03-777   *Graduate Colloqium Artificial Intelligence*, Fall 1998-Fall 2007.
  - CS 03-531a   *Computer Science I*, Fall 1999.
  - CS 03-531b   *Programming Course for Computer Science I*, Fall 1999.

- **Lecturer and Associate Lecturer** at the University of Münster: 1988-1996.
  - GEO 19-x   *Neural networks*, Fall 1993.
  - GEO 19-x   *Geoinformatics*, (partly), Spring 1992, 1993.
  - GEO 19-x   *Computer supported recording of climatological and hydrological data*, Spring 1992, Fall 1993.
  - GEO 19-x   *Student-Excursion: Excursion with practical climatological measuring methods*, Fall 1991.
  - GEO 19-x   *Practical class: Climatological measuring methods*, Fall 1991.
  - GEO 19-x   *Artificial neural networks for in landscape-ecology*, Spring 1991.

Mentoring

- **List of supervised PhD Theses**[1]
  - Hande Küçük: *TBD in the area of Semantic Web and Bioinformatics*, from Fall 2011.
  - Andreas Seekircher: *TBD in the area of Robotics and AI*, from January 2010.
  - Saminda Abeyruwan: *PrOnto: Unsupervised Lexico-Semantic Ontology Generation Using Probabilistic Methods*, from May 2010.

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[0] A collegiate project is a 4-semester project with approx. 20-30 students who usually start in semester 5 and end the project in semester 8. The goal is set up a rather large project and manage it by themselves. The project is accompanied with lectures and seminars around the topic of the project.

[1] Also as 2nd supervisor

- – Oliver Obst: *Controlling Physical Multiagent Teams: Getting League-Independent Results from RoboCup Soccer.* Doctorate in 2006.
  - – Michael Lutz: *Ontology-Based Discovery and Composition of Geographic Information Services*, Doctorate in 2005.
  - – Udo Einspanier: *Formal Metamodeling for the Specification and Implementation of Feature Catalogues*, Doctorate in 2005.
- **List of supervised Masters Theses (Diplom)**
  - – Morthada Alkhawaja: *TerraFly and Semantic Web*, MSc in July 2010.
  - – Saminda Abeyruwan: *PrOnto: Unsupervised Lexico-Semantic Ontology Generation Using Probabilistic Methods*, MSc in May 2010.
  - – Tobias Warden: *Spatio-Temporal Real-Time Analysis of Dynamic Scenes in the RoboCup 3D Simulation League*, MSc in 2008.
  - – Arne Stahlbock: *Functions for the evaluation of situation for action selection* , MSc in 2008.
  - – Carsten Rachuy: *Probabilistic model for classification and prediction of game situations*, MSc in 2008.
  - – Arne Sahlmann and Sven Schade: *Comparison of formal approaches for describing the semantics of geoinformation services to enable matchmaking*, MSc in 2006.
  - – Mathis Karmann: *Constructing and Validating an Ontology Definition Metamodel with USE*, MSc in 2005.
  - – Björn Meyer: *Ranking and configuration knowledge in knowledge-based diagnosis systems for clients support*, MSc in 2005.
  - – Christian Drücker: *Opponent modeling in multi-agent systems*, MSc in 2004.
  - – Sebastian Hübner: *Qualitative abstraction of time for annotation and retrieval in the Semantic Web*, MSc in 2003.
  - – Magnus Kolweyh: *Self-Organizing Virtual Communities with Peer-to-Peer Agents*, MSc in 2003.
  - – Waleri Enns: *Plan Merging in dynamic Multiagent-Environments*, MSc in 2003.
  - – Hans-Georg Weland: *Strategy recognition in dynamic real time environments*, MSc in 2002.
  - – Jörg Wührmann: *Conception and development of an ontology-based information system for environmental hazardous substances*, MSc in 2002.
  - – Mark Sancken: *Interactive manipulation and real time portrayal of three-dimensional geographical data*, MSc in 2001.
  - – Johannes Vogel: *Quality assurance and system outline*, MSc in 2000.
  - – Stefan Michel: *Conception and development of a computer supported field database for the plant protection advice system PRO_PLANT*, MSc in 1996.
  - – Karsten Hell: *Conception and development of a computer supported information system for canola pests*, MSc in 1995.
- **List of supervised Undergraduates**
  - – John Mauldin, Spring 2011 - present
  - – Armando Locay, Summer 2009-Fall 2010
  - – Matthew Ferens, Summer 2009-Fall 2010
  - – Adam Schwartz, Spring 2010-Fall 2010

Service

- Video Games Club (U Miami), 2008-present.

- AI Lab steering committee (U Bremen), 1998-2008.
- AI Lab colloquium organization (U Bremen), 1998-2008.
- Faculty Recruiting committee, (U Bremen),1998-2004.
- Center for Computing Technologies Council (U Bremen), 1998-2001.
- Departments teaching strategy committee (U Bremen), 1998-2003.
- Committee for new courses and diversity in the AI, Cognition, and Robotics area (U Bremen), 2000-2001.
- Committee for conception of a new Department (Geo-Informatics, U Münster), 1991-1995.