

# Curriculum Vitae

Johann Gamper

## Education

- 1968–1976 Primary school in Klausen/Latzfons, Italy.
- 1976–1981 High school in Brixen, Italy.
- 1981–1987 BSc study in Data System Engineering, Technical University of Vienna, Austria.
- 1983–1989 BSc and MSc study in Computer Science with a specialization in Medical Informatics, Technical University of Vienna, Austria. Title of the MSc thesis: *HEPAXPERT-I: An Expert System for Automatic Interpretation of Hepatitis A and B Serology Findings*. Supervisor: Prof. Klaus-Peter Adlassnig.
- 01/93–10/96 PhD study in Computer Science, RWTH Aachen, Germany. Title of the PhD thesis: *A Temporal Reasoning and Abstraction Framework for Model-Based Diagnosis Systems*. First supervisor: Prof. Wolfgang Nejdl, University of Hannover and RWTH Aachen. Second supervisor: Prof. Matthias Jarke, RWTH Aachen.

## Degrees

- 24/06/1987 BSc in Data System Engineering, Technical University of Vienna, Austria.
- 08/11/1989 MSc in Computer Science (“Diplom-Ingenieur in Informatik”), Technical University of Vienna, Austria.
- 04/11/1996 PhD in Computer Science (“Dr.rer.nat.”) with “*summa cum laude*”, RWTH Aachen, Germany.
- 23/09/2003 Winner of the competition “Procedura di valutazione comparativa per un posto di ricercatore universitario di ruolo per il settore scientifico-disciplinare INF/01 – Informatica” for a position as assistant professor (“ricercatore”) at the Free University of Bozen-Bolzano, Faculty of Computer Science, Italy.
- 18/11/2007 Winner of the competition “Procedura di valutazione comparativa per un posto di professore universitario di ruolo di seconda fascia (associato) per il settore scientifico-disciplinare INF/01 – Informatica” for a position as associate professor at the Free University of Bozen-Bolzano, Faculty of Computer Science, Italy.

## Languages

- German (mother tongue)
- Italian and English (fluently written and spoken)

## Employments and Research Activities

- 10/89–04/90 Scientific collaborator at the University of Vienna, Austria, Department of Medical Computer Sciences, Medical Expert Systems Group. Head: Prof. Klaus-Peter Adlassnig.
- 05/90–05/91 Basic military service in Italy.
- 06/91–10/93 University assistant at the University of Vienna, Austria, Department of Medical Computer Sciences, Medical Expert Systems Group. Head: Prof. Klaus-Peter Adlassnig.
- 11/93–01/95 ERASMUS scholarship at RWTH Aachen, Germany, Institute for Knowledge-Based Systems. Head: Prof. Wolfgang Nejdl.
- 02/95–10/96 University assistant at the University of Hannover, Germany, Institute for Knowledge-Based Systems. Head: Prof. Wolfgang Nejdl.
- 11/96–10/00 Senior researcher at the European Academy Bolzano-Bozen, Italy. Coordinator of the Knowledge Engineering Group in the Scientific Area “Language and Law”.
- 11/00–09/03 Coordinator of the establishment of the new Faculty of Computer Science at the Free University of Bozen-Bolzano and head of the faculty administration.
- 10/03–02/08 Assistant professor (“ricercatore”) in the scientific sector “INF/01 – Informatica” at the Free University of Bozen-Bolzano, Faculty of Computer Science, Center for Database and Information Systems.
- since 03/08 Associate professor in the scientific sector “INF/01 – Informatica” at the Free University of Bozen-Bolzano, Faculty of Computer Science, Center for Database and Information Systems.

## Awards

- *Outstanding Paper Award* at the World Conference on Educational Multimedia, Hypermedia & Telecommunications for the following paper: *Describing Verb Valency in an Electronic Learner’s Dictionary: Linguistic and Technical Implications*, Andrea Abel, Johann Gamper, Judith Knapp, and Vanessa Weber.
- The following paper has been selected as *one of the best papers* in the session adaptive hypermedia in education at the 6th World Multiconference on Systemics, Cybernetics and Informatics, 2002: *Tutoring in a language learning system*, Johann Gamper and Judith Knapp.
- “*Anerkennungspreis 2002 für Forschungs- und Studienprojekte der Eduard-Wallnöfer-Stiftung*” for the ELDIT system, Innsbruck, Austria.

- “*Borchers-Plakette*” for excellent research for my work on the PhD thesis, awarded by “Freunde und Förderer der RWTH Aachen”, Germany, 1997.

## Main Research Interests

- Data-centric applications in database and information systems with a particular focus on temporal information
- Approximate matching of hierarchical data structures in databases

## Research Projects, Funds, and Software Products

### Summary of Research Projects and Funds

Project name	Period	Funding	Role
MEDAN	01/2008–12/2011	300,000	Principal co-investigator
TTDBT	01/2006–12/2007	9,770	Principal investigator
EBZ 2015	10/2005–12/2015	440,000	Principal investigator
EBZ – DIGITAL CITY	03/2002–06/2005	120,000	Principal investigator
EMAYOR	01/2004–02/2006	110,000	FUB Principal investigator <sup>1</sup>
PEOPLE	01/2003–12/2004	130,000	FUB Principal investigator
ELDIT	01/2000–10/2004		FUB Principal investigator
MIRIS	06/2001–06/2003	45,000	FUB Principal investigator
CATEX	11/1997–10/2000		FUB Principal investigator
HEPAXPERT	1991–1993		Scientific collaborator
CADIAG	1991–1993		Scientific collaborator
KBWEAN	1991–1993		Scientific collaborator
2 MSc bursaries	2005–2006	14,000	Coordinator
<b>Total</b>		<b>1,168,770</b>	

<sup>1</sup> Stands for coordinator/scientist-in-charge for the Free University of Bozen-Bolzano.

## Funds

### Project MEDAN

Period: 01/2008–12/2011

Funding: 300,000 Euro, Health Care District South Tyrol

Role: Principal co-investigator

Objectives: Create competences in data warehouse and data mining technologies and contribute towards increasing the critical awareness in these areas in the health care sector. Conduct basic and applied research on specific topics in this field, such as data modeling and cleaning, temporal pattern mining, multi-dimensional temporal aggregation, data visualization, and mobile advisory services.

**Project TTDBT**

Period: 01/2006–12/2007  
Funding: 9,770 Euro, Free University of Bozen-Bolzano  
Role: Principal investigator  
Objectives: Extend and generalize existing temporal data models and query languages, focusing on the following aspects: evaluation of temporal OLAP queries with different temporal semantics and representation of calendar dates.

**Project EBZ 2015**

Period: 10/2005–12/2010, renewable for 5 years until 12/2015  
Funding: 220,000 Euro (+ 220,000 Euro), Municipality of Bozen-Bolzano  
Role: Principal investigator  
Objectives: Continue the EBZ – DIGITAL CITY initiative and strengthen the activities towards an excellent administration based on IT. This initiative is implemented by concrete research projects in relevant areas, e.g., temporal-spatial databases for the management of the times of the city.

**Project EBZ – DIGITAL CITY**

Period: 03/2002–06/2005  
Funding: 120,000 Euro, Municipality of Bozen-Bolzano  
Role: Principal investigator  
Objectives: Promote and explore the use of IT in the municipality administration in order to improve the quality of services and the efficiency of the administration.

**Project EMAYOR**

Period: 01/2004–02/2006  
Funding: 110,000 Euro (total budget: 2 Mio. Euro), 6FP IST STREP project  
Role: FUB Principal investigator  
Objectives: Development of an open, secure, and affordable e-government platform for small and medium European public organizations.

**Project PEOPLE**

Period: 01/2003–12/2004  
Funding: 130,000 Euro (total budget: 7 Mio. Euro), Department of Innovation and Technology of the Italian Government  
Role: FUB Principal investigator  
Objectives: Development and implementation of a middle-ware layer for the most important services offered by an Italian municipality.

**Project MIRIS**

Period: 06/2001–06/2003  
Funding: 45,000 Euro, European Academy of Bozen-Bolzano  
Role: FUB Principal investigator  
Objectives: Development of a comprehensive legal information system about minority rights in Europe; uses an ontology to provide content-based access.

## **2 Bursaries for MSc students in Computer Science**

Period: 2005

Funding: 14,000 Euro, Municipality of Bozen-Bolzano

Role: Coordinator

## **Software Products**

Several of my past research projects had a strong focus on the development of running software systems that went beyond pure research prototypes:

- **HEPAXPERT:** An expert systems for the interpretation of hepatitis A, B, and C serology; emerged to a professional system which is distributed by the “Software Unlimited Daternverarbeitungs Ges.m.b.H.” company (<http://www.ping.at/hepax>) in Vienna, Austria and is now also accessible on-line at <http://medexpert.imc.akh-wien.ac.at/hepax>.

Role: I programmed the first version for hepatitis A and B as part of my MSc thesis and worked later as a scientific collaborator in several extensions of the program.

- **ELDIT:** Language learning system accessible at <http://www.eurac.edu/eldit>.  
Role: FUB Principal investigator.
- **MIRIS:** Legal information system accessible at <http://www.eurac.edu/miris>.  
Role: FUB Principal investigator
- **CATEX:** Has been extended to a juridical terminological information system, called BISTRO, and is accessible at <http://www.eurac.edu/bistro>.  
Role: FUB Principal investigator

## Publications<sup>1</sup>

### Work in Progress

- [i] M. Akinde, M. H. Böhlen, D. Chatziantoniou, and J. Gamper. The generalized multi-dimensional join. 14 pages. Submitted for publication.
- [ii] J. Gamper, M. H. Böhlen, and C. S. Jensen. TMDA – an expressive, multi-dimensional temporal aggregation operator. 20 pages. In preparation.

### Book Chapters, Edited Books, and Conference Proceedings

- [1] J. Gamper, M. Böhlen, and C. S. Jensen. Temporal aggregation. In Ling Liu and M. Tamer Özsu, editors, *Encyclopedia of Database Systems*, pages 2924–2929. Springer-Verlag, 2009.
- [2] M. Böhlen, J. Gamper, C. S. Jensen, and R. T. Snodgrass. SQL-based temporal query languages. In Ling Liu and M. Tamer Özsu, editors, *Encyclopedia of Database Systems*, pages 2762–2768. Springer-Verlag, 2009.
- [3] A. Mitrakas, P. Hengeveld, D. Polemi, and J. Gamper. Towards secure e-government. In *Secure E-Government Web Services*, pages 1–28. IDEA Group Publishing, Hershey, USA, 2007.
- [4] A. Mitrakas, P. Hengeveld, D. Polemi, and J. Gamper, editors. *Secure E-Government Web Services*. IDEA Group Publishing, Hershey, USA, 2007.
- [5] M. H. Böhlen, J. Gamper, W. Polasek, and M. Wimmer, editors. *Proceedings of the International Conference "E-Government: Towards Electronic Democracy" (TCGOV-2005)*, LNAI 3416, Bozen, Italy, March 2005. Springer-Verlag.
- [6] M. H. Böhlen, J. Gamper, W. Polasek, and M. Wimmer, editors. *Poster Proceedings of the TED Conference on e-Government – Electronic Democracy: The Challenge Ahead*, volume 13 of *Schriftenreihe Informatik*, Bozen, Italy, March 2005. Universitätsverlag Rudolf Trauner.

### Journal Publications

- [7] N. Augsten, M. H. Böhlen, J. Gamper. The pq-gram distance between ordered labeled trees. *ACM Transactions on Database Systems (TODS)*, Appears in 2010.
- [8] M. H. Böhlen, J. Gamper, and C. S. Jensen. An algebraic framework for temporal attribute characteristics. *Annals of Mathematics and Artificial Intelligence*, 46(3): 349–374, March 2006. (CIR: 0.79)

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<sup>1</sup>Abbreviations used: CIR = CiteSeer impact rating (2003), AR = acceptance rate

- [9] P. Brusilovsky, J. Knapp, and J. Gamper. Supporting teachers as content authors in intelligent educational systems. *International Journal of Knowledge and Learning*, 2(3/4): 191–215, 2006.
- [10] J. Gamper and J. Knapp. A review of intelligent CALL systems. *Computer Assisted Language Learning*, 15(4):329–342, October 2002.
- [11] J. Gamper and J. Knapp. Adaptation in a vocabulary acquisition system. *Zeitschrift Künstliche Intelligenz*, 3(2):27–30, 2002.
- [12] J. Gamper and O. Stock. Corpus-based terminology. *TERMINOLOGY*, 5(2):147–159, 1998/1999.
- [13] J. Gamper and W. Nejdl. Abstract temporal diagnosis in medical domains. *Artificial Intelligence in Medicine*, 10(3):209–234, 1997. (CIR: 0.69)

## Conference and Workshop Publications

### Database and Information Systems

- [14] J. Gordevičius, J. Gamper, and M. Böhlen. Parsimonious temporal aggregation. In *Proceedings of the 12th International Conference on Extending Database Technology (EDBT-09)*, pages 1006–1017, Saint Petersburg, Russia, March 24–26, 2009.
- [15] I. Timko, M. Böhlen, and J. Gamper. Sequenced spatio-temporal aggregation in road networks. In *Proceedings of the 12th International Conference on Extending Database Technology (EDBT-09)*, pages 48–59, Saint Petersburg, Russia, March 24–26, 2009.
- [16] R. Kasperovics, M. H. Böhlen, and J. Gamper. Evaluating exceptions on time slices. In *Proceedings of the 28th International Conference on Conceptual Modeling (ER 2009)*, pages 251–264, 2009.
- [17] V. Bauer, J. Gamper, R. Loperfido, S. Profanter, S. Putzer, and I. Timko. Computing isochrones in multi-modal, schedule-based transport networks (Demo paper). In *Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 08)*, pages 1–2, Irvine, CA, USA, November 5–7, 2008.
- [18] M. Böhlen, J. Gamper, and C. S. Jensen. Towards general temporal aggregation. In *Proceedings of the 25th British National Conference on Databases (BNCOD-08)*, LNCS 5071, pages 257–269, Cardiff, UK, July 7–10, 2008. Invited paper. (CIR: 0.36)
- [19] J. Gordevičius, J. Gamper, and M. H. Böhlen. A greedy approach towards parsimonious temporal aggregation. In *Proceedings of the 15th International Symposium on Temporal Representation and Reasoning (TIME-08)*, pages 88–92, Montreal, Canada, June 16–18, 2008. (CIR: 0.41)



- [20] R. Kasperovics, M. H. Böhlen, and J. Gamper. Representing public transport schedules as repeating trips. In *Proceedings of the 15th International Symposium on Temporal Representation and Reasoning (TIME-08)*, pages 54–58, Montreal, Canada, June 16–18, 2008. (CIR: 0.41)
- [21] N. Augsten, M. H. Böhlen, C. Dyreson, and J. Gamper. Approximate joins for data centric XML. In *Proceedings of the 24th International Conference on Data Engineering (ICDE-08)*, pages 814–823, Cancun, Mexico, April 7-12, 2008. (CIR: 1.25; AR: 12.1%)
- [22] N. Augsten, M. H. Böhlen, and J. Gamper. An incrementally maintainable index for approximate lookups in hierarchical data. In *Proceedings of the 32nd International Conference on Very Large Databases (VLDB-06)*, pages 247–258, Seoul, Korea, September 12–15, 2006. (CIR: 1.52; AR: 13.2%)
- [23] M. H. Böhlen, J. Gamper, and C. S. Jensen. How would you like to aggregate your temporal data? In *Proceedings of the 13th International Symposium on Temporal Representation and Reasoning (TIME-06)*, pages 121–136, Budapest, Hungary, June 15–17, 2006. IEEE Computer Society Press. Invited paper. (CIR: 0.41)
- [24] M. H. Böhlen, J. Gamper, and C. S. Jensen. Multi-dimensional aggregation for temporal data. In *Proceedings of the 10th International Conference on Extending Database Technology (EDBT-06)*, LNCS 3896, pages 257–275, Munich, Germany, March 2006. Springer-Verlag. (CIR: 1.25; AR: 16%)
- [25] N. Augsten, M. H. Böhlen, and J. Gamper. Approximate matching of hierarchical data using *pq*-grams. In *Proceedings of the 31th International Conference on Very Large Databases (VLDB-05)*, pages 141–152, Trondheim, Norway, Aug.–Sep. 2005. Morgan Kaufmann Publishers, Inc. (CIR: 1.52; AR: 16%)
- [26] N. Augsten, M. H. Böhlen, and J. Gamper. Reducing the integration of public administration databases to approximate tree matching. In *Proceedings of the Third International Conference on Electronic Government (EGOV-04)*, LNCS 3183, pages 102–107, Zaragoza, Spain, Aug/Sept 2004.
- [27] J. Gamper and N. Augsten. The role of web services in digital government. In *Proceedings of the Second International Conference on Electronic Government (EGOV-03)*, LNCS 2739, pages 161–166, Prague, Czech Republic, September 2003. Springer-Verlag.
- [28] J. Gamper and P. Dongilli. Towards a portal for minority rights in Europe. In *Proceedings of the IADIS International Conference on e-Society 2003*, pages 313–320, Lisbon, Portugal, June 2003. IADIS Press.
- [29] J. Gamper and N. Augsten. The ”eBZ – Digital city” initiative. In *Proceedings of the IADIS International Conference on e-Society 2003*, pages 156–162, Lisbon, Portugal, June 2003. IADIS Press.
- [30] J. Gamper and P. Dongilli. Towards a semantic portal for minority rights in Europe. In *Collected Posters of the First International Semantic Web Conference (ISWC 2002)*, page 20, Sardinia, Italy, June 2002.

- [31] J. Gamper, W. Nejdil, and M. Wolpers. Combining ontologies and terminologies in information systems. In *Proceedings of the 5th International Congress on Terminology and Knowledge Engineering (TKE'99)*, pages 152–168, Innsbruck, Austria, August 1999.

### **e-Learning**

- [32] J. Knapp, J. Gamper, and P. Brusilovsky. Multiple use of content in a web-based language learning system. In *Proceedings of the 4th International Conference on Advanced Learning Technologies (ICALT-2004)*, pages 750–752, Joensuu, Finland, Aug. 30 – Sept. 1 2004. (CIR: 0.09)
- [33] J. Knapp, J. Gamper, and P. Brusilovsky. Reuse of lexicographic examples in a web-based learners' dictionary. In *Proceedings of the World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-LEARN 2004)*, pages 776–783, Washington, DC, USA, November 1–5 2004.
- [34] A. Trifonova, J. Knapp, M. Ronchetti, and J. Gamper. Mobile ELDT: Transition from an e-learning to an m-learning system. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2004)*, Lugano, Switzerland, June 21–26 2004.
- [35] A. Abel, J. Gamper, J. Knapp, and V. Weber. Evaluation of the web-based learners dictionary ELDT. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2003)*, pages 1210–1217, Honolulu, Hawaii, June 2003.
- [36] A. Abel, J. Gamper, J. Knapp, and V. Weber. Describing verb valency in an electronic learner's dictionary: Linguistic and technical implications. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2003)*, pages 1202–1209, Honolulu, Hawaii, June 2003.
- [37] A. Abel, J. Gamper, J. Knapp, and V. Weber. New answers to old questions about lexicon acquisition and dictionary use. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2003)*, pages 1218–1224, Honolulu, Hawaii, June 2003.
- [38] J. Gamper and J. Knapp. A data model and its implementation for a web-based language learning system. In *Proceedings of the 12th International World Wide Web Conference (WWW-2003)*, pages 217–225, Budapest, Hungary, May 2003. (CIR: 1.54; AR: 37%)
- [39] J. Gamper and J. Knapp. XML for an electronic learners' dictionary. In *Proceedings of the IADIS International Conference on WWW/Internet 2002*, pages 427–434, Lisbon, Portugal, November 2002. IADIS Press.
- [40] J. Gamper and J. Knapp. Collaborative language learning with a Web-based tandem system in South Tyrol. In *Proceedings of the 1st International Conference on Educational Technology in Cultural Context*, no. 3 in International Proceedings Series, pages 91–104, Joensuu, Finland, September 2002. University of Joensuu.

- [41] J. Gamper and J. Knapp. A web-based language learning system. In *Proceedings of the 1st International Conference on Web-based Learning* (co-located workshop with VLDB), LNCS 2436, pages 106–118, Hong Kong, August 2002. Springer-Verlag.
- [42] J. Gamper and J. Knapp. Tutoring in a language learning system. In *Proceedings of the 6th World Multiconference on Systemics, Cybernetics and Informatics*, pages 465–470, Orlando, Florida, July 2002. Selected as one of the best papers in the session "Adaptive Hypermedia in Education".
- [43] J. Gamper and J. Knapp. A Web-based tandem system for language learning in South Tyrol. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2002)*, pages 567–568, Denver, Colorado, June 2002.
- [44] J. Gamper and J. Knapp. New media in the design of a learners' dictionary. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2001)*, pages 541–546, Tampere, Finland, June 2001.
- [45] J. Gamper and J. Knapp. A review of call systems in foreign language instruction. In *Proceedings of the 10th International Conference on Artificial Intelligence in Education (AI-ED 2001)*, pages 377–388, San Antonio, Texas, May 19–23 2001. IOS Press Amsterdam.
- [46] C. Qu, J. Gamper, and W. Nejdl. A collaborative courseware generating system based on WebDAV, XML, and JSP. In *Proceedings of the IEEE International Conference on Advanced Learning Technologies (ICALT-2001)*, Madison, Wisconsin, USA, August 2001. (CIR: 0.09)
- [47] C. Qu, J. Gamper, and W. Nejdl. Collaborative courseware authoring and publishing based on WebDAV, XML, and XSLT. In *Proceedings of the IEEE International Conference on Trends in Communications (EUROCON-2001)*, Bratislava, Slovak Republic, July 2001.
- [48] J. Gamper and J. Knapp. Towards an adaptive learners' dictionary. In *Proceedings of the International Conference on Adaptive Hypermedia and Adaptive Web-based Systems (AH-00)*, LNCS 1892, pages 311–314, Trento, Italy, August 2000. Springer-Verlag.
- [49] J. Gamper and J. Knapp. Adaptation in a language learning system. In *Proceedings of the ABIS-Workshop 2001 held in conjunction with "Lehren, Lernen, Wissen und Adaptivität"*, Dortmund, Germany, October 2001.

### **Computer-Assisted Terminology Extraction**

- [50] J. Gamper. A parallel corpus of Italian/German legal texts. In *Proceedings of the Second International Conference on Language Resources & Evaluation*, pages 531–538, Athens, Greece, June 2000.

- [51] J. Gamper. Encoding a parallel corpus for automatic terminology extraction. In *Proceedings of the Ninth Conference of the European Chapter of the Association for Computational Linguistics*, pages 275–276, Bergen, Norway, June 1999.
- [52] J. Gamper and P. Dongilli. Primary data encoding of a bilingual corpus. In *Proceedings of the 11th Annual Meeting of the GLDV*, Frankfurt a/M, Germany, July 1999.
- [53] J. Gamper. Towards the creation of an Italian/German corpus of legal texts. In *Proceedings of the SLE-Workshop on Language Technologies — Multilingual Aspects*, pages 31–38, Ljubljana, Slovenia, July 1999.
- [54] J. Gamper. Improving textual knowledge representation through markup and ontologies. In *Proceedings of the Symposium on Languages for Special Purposes (LSP'99)*, pages 114–125, Brixen, Italy, September 1999.
- [55] J. Gamper. Terminology and medical diagnosis systems. In *Proceedings of the Twin Conference on Professional Communication and Knowledge Transfer (Pro-Com'98)*, Vienna, Austria, August 1998.
- [56] J. Gamper. Aufbau eines zweisprachigen Textkorpus für Terminologie-Extraktion. In *Proceedings zur Tagung Rechtslinguistik des Deutschen und Italienischen: Ziele, Methoden, Ergebnisse*, Europäische Akademie Bozen, Italien, October 1998.

### **Model-Based Diagnosis and Expert Systems**

- [57] J. Gamper and W. Nejdl. Modellbasierte Diagnose und Zeitliches Schließen in der Medizin. In *Arbeitspapiere zum Workshop Informationsverarbeitung in der Biomedizin (Erkennung von Stoffwechselerkrankungen)*, pages 39–54, Leipzig, June 1996. Universität Leipzig, Institut für Informatik.
- [58] J. Gamper and W. Nejdl. Proposing measurements in dynamic systems. In *Proceedings of the 14th International Joint Conference on Artificial Intelligence*, pages 784–790, Montréal, Canada, August 1995. Morgan Kaufmann Publishers, Inc. (CIR: 1.82; AR: 22%)
- [59] J. Gamper and W. Nejdl. Formalizing reasoning about change: A temporal diagnosis approach. In *Fourth Congress of the Italian Association for Artificial Intelligence (AI\*IA'95)*, LNAI 992, pages 335–346, Firenze, Italy, October 1995. Springer-Verlag.
- [60] J. Gamper and W. Nejdl. Formalizing reasoning about change: A temporal diagnosis approach. In *Proceedings of the 2nd Dutch/German Workshop on Non-Monotonic Reasoning*, pages 60–66, Utrecht, The Netherlands, March 1995.
- [61] W. Nejdl and J. Gamper. Harnessing the power of temporal abstractions in model-based diagnosis of dynamic systems. In *Proceedings of the 11th European Conference on Artificial Intelligence*, pages 667–671, Amsterdam, The Netherlands, August 1994. John Wiley & Sons. (CIR: 0.69; AR: 31%)

- [62] W. Nejdl and J. Gamper. Model-based diagnosis with qualitative temporal uncertainty. In *Proceedings of the 10th Conference on Uncertainty in Artificial Intelligence*, pages 432–439, Seattle, Washington, July 1994. Morgan Kaufmann Publishers, Inc. (AR: 48%)
- [63] J. Gamper and W. Nejdl. Proposing measurements in dynamic systems. In *Working Papers of the 5th International Workshop on Principles of Diagnosis (DX-94)*, pages 114–120, New Paltz, NY, October 1994.
- [64] W. Nejdl and J. Gamper. Qualitative temporal behavior description and temporal diagnosis using interval algebra. In *4th International Workshop on Principles of Diagnosis*, pages 91–104, Aberystwyth, Wales, September 1993.
- [65] L.I. Kuncheva, R.Z. Zlatev, S.N. Neshkova, and J. Gamper. A combination scheme of artificial intelligence and fuzzy pattern recognition in medical diagnosis. In *8th Austrian Artificial Intelligence Conference (FLAI'93)*, LNAI 695, pages 157–164, Linz, Austria, June 1993. Springer-Verlag.
- [66] M. Hiesmayr, J. Gamper, T. Neugebauer, P. Mares, K.-P. Adlassnig, and W. Haider. Clinical application of patient data management systems (PDMS): Computer-assisted weaning from artificial ventilation (KBWean). In *Patient Data Management in Intensive Care*, pages 129–138. Springer-Verlag, 1993.
- [67] M. Hiesmayr, J. Gamper, P. Mares, T. Neugebauer, E. Donner, K.-P. Adlassnig, and W. Haider. Klinische Anwendung: Respiratorentwöhnung mit Datenübernahme aus dem PDMS (KBWEAN). In *Abstract Book of WIT'93, PDMS-Workshop, Wiener Intensivmedizinische Tage'93*, pages 39–40, 1993.

### **PhD Thesis**

- [68] J. Gamper. *A temporal reasoning and abstraction framework for model-based diagnosis systems*. PhD thesis, RWTH Aachen, July 1996. Published in "infix"-Verlag, St. Augustin.

## Teaching Activities

I taught courses in German, Italian, and English both at the undergraduate and graduate level and at different universities.

### Free University of Bozen-Bolzano

- “*Temporal and Spatial Databases*”, MSc in Computer Science, 24 lecture hours and 12 exercise hours, 2005/2006, 2006/2007, 2007/2008, 2008/2009.  
Course content: time domain, structure, and granularities, temporal data models, temporal query languages, relational algebra for temporal operators, evaluation of temporal operators, spatial-temporal data models, current research problems.  
<http://www.inf.unibz.it/dis/teaching/TSDB>
- *Distributed Database Systems*, MSc in Computer Science, 24 lecture hours and 12 exercise hours, 2007/2008, 2008/2009.  
Course content: DDBMS architecture, distributed database design, semantic integrity control, distributed query processing and optimization, transactions, concurrency control, reliability, parallel DBMS  
<http://www.inf.unibz.it/dis/teaching/DDB>
- *Seminar in Databases*, MSc in Computer Science, 24 lecture hours and 12 exercise hours, 2008/2009, 2009/2010.  
Course content: Selected topics in database systems (Temporal Aggregation in 2008, Query Processing in Spatial Network Databases in 2009)  
<http://www.inf.unibz.it/dis/teaching/SDB>
- *Database Management Systems*, BSc in Applied Computer Science and MSc in Computer Science, 24 lecture hours and 12 exercise hours, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009.  
Course content: Storage and file structure, indexing and hashing, query processing, query optimization, transaction processing, concurrency control, recovery system.  
<http://www.inf.unibz.it/dis/teaching/DMS>
- *Introduction to Programming*, BSc in Applied Computer Science, 36 lecture hours and 18 exercise hours, 2001/2002, 2002/2003, 2003/2004.  
Course content: Introduction to problem-solving, fundamental programming constructs (variables, data types, arrays, strings, expressions, operators, control structures, functions, basic I/O), principles of object-oriented programming (classes, objects, inheritance), streams, exception handling.  
Programming language: Java.  
<http://www.inf.unibz.it/dis/teaching/ITP>

- *Computing*, BSc in Agricultural Science and BSc in Economics, 30 lecture hours and 20 exercise hours, 1999/2000, 2000/2001, 2001/2002, 2002/2003.

Course content: Introduction to computer science, computer systems architecture, operating systems, data networks, Internet, database systems, programming in Visual Basic for applications.

- *Foundations of Computer Science*, BSc in Industrial Engineering, 20 lecture hours and 30 exercise hours, together with Prof. Nejd, 1999/2000, 2000/2001, 2001/2002.

Course content: Introduction to problem-solving, fundamental programming constructs (variables, data types, arrays, strings, expressions, operators, control structures, functions, basic I/O), principles of object-oriented programming (classes, objects, inheritance), streams, exception handling.

Programming language: Java.

### **University of Hannover**

- Exercises in *Artificial Intelligence*, MSc in Computer Science, 1994/1995, 1995/1996.

Course content: Problem-solving by searching, first-order logic, knowledge representation and reasoning, planning, uncertainty, probabilistic reasoning, decision trees.

Programming language: Prolog

### **RWTH Aachen**

- Exercises in *Expert Systems*, MSc in Computer Science, 1993/1994.

Course content: Prolog, searching, truth maintenance systems, reasoning with uncertainty, planning, decision trees

Programming language: Prolog

- Seminar in *Distributed Artificial Intelligence*, MSc in Computer Science, 1993/1994.

Seminar book: Readings in Distributed Artificial Intelligence, by A. H. Bond and L. Gasser

### **University of Vienna**

- Seminar in *Computer Applications in Medicine*, MSc in Computer Science, 1992/1993.

Seminar book: Computer Applications in Health Care and Biomedicine, by E. H. Shortliffe, L. E. Perreault, G. Wiederhold, and L. M. Fagan

## Supervision of Theses Projects

### Supervision of PhD Theses

- Juozas Gordevicius: *Approximate Temporal Aggregation*, Free University of Bozen-Bolzano, 2006-2009.
- Romans Kasperovics: *Compact Representation of Temporal Repetitions*, Free University of Bozen-Bolzano, 2005-2008. (co-supervision with Prof. Böhlen)
- Nikolaus Augsten: *Approximate Join of Hierarchical Data Structures*, Aalborg University, Denmark, 2002–2006. (co-supervision with Prof. Böhlen)

The aim of this thesis is to study the integration of hierarchical data structures from different data sources using approximate matching techniques. As a concrete application scenario data from the Municipality of Bozen-Bolzano are joined via residential addresses. Residential addresses have a hierarchical structure and can be represented in a tree-like form. The approach is general, and will be applied to other hierarchical data structures such as XML documents.

- Judith Knapp: *A New Approach to CALL Content Authoring*, University of Hannover, defended on October 15, 2004. (co-supervision with Prof. NejdI)

The aim of this thesis is the development and implementation of a language learning system with a particular focus on the difficult and time-consuming content authoring part. Modern hypermedia technologies are applied. They offer new possibilities for the presentation and distribution of learning material and support a more interactive and individual learning mode.

### Supervision of MSc Theses

- Jürgen Dellatorre: *Digital identity for e-government services*, Free University of Bozen-Bolzano, September 2006.
- Juozas Gordevicius: *Controlling the size of temporal aggregation results: an information-theoretic approach*, Free University of Bozen-Bolzano, July 2006.
- Johann J. Königs: *Monitoring und Diagnose in modellbasierten Systemen*, RWTH Aachen, 1996 (co-supervision with Prof. NejdI).
- Kuk Hwan Kang: *Verwendung von Temporal Reasoning Systemen in der modellbasierten Diagnose*, RWTH Aachen, 1995 (co-supervision with Prof. NejdI).
- Jürgen Grief: *Integration von Modellbasierter Diagnose und temporalem Schliessen*, RWTH Aachen, 1995 (co-supervision with Prof. NejdI).

### Supervision of BSc Theses

- Andreas Heinisch: *Building a medical data warehouse for cancer therapies*, Free University of Bozen-Bolzano, October 2009.



- Willi Cometti: *Scalable computation of isochrones in bimodal spatial networks*, Free University of Bozen-Bolzano, July 2009.
- Anton Dignös: *Temporal multi-dimensional aggregation for almost sorted data*, Free University of Bozen-Bolzano, October 2008.
- Markus Giacomozzi: *Performance optimization of SQL queries in a large enterprise environment*, Free University of Bozen-Bolzano, July 2008.
- Günther Seeber: *Ein eGovernment Portal für Online-Anträge der Handwerker in Südtirol*, Free University of Bozen-Bolzano, July 2008.
- Andrea Moskwita: *Mining a medical data warehouse to estimate the GRP: A case study at the Hospital Meran*, Free University of Bozen-Bolzano, March 2008.
- Veronika Bauer: *Computing isochrones in multi-modal transport networks*, Free University of Bozen-Bolzano, October 2007.
- Lukas Kaser: *Implementation and evaluation of a multidimensional temporal aggregation operator*, Free University of Bozen-Bolzano, March 2007.
- Norman Marmsoler: *Integration of independent data sources on the example of [www.vistdolomites.com](http://www.vistdolomites.com)*, Free University of Bozen-Bolzano, October 2006.
- Dorothea Mair: *A data analysis tool to support data cleaning*, Free University of Bozen-Bolzano, March 2006.
- Davide Schuen: *A distance measure for approximate joins over residential addresses*, Free University of Bozen-Bolzano, 2004.
- Roland Innerhofer-Oberperfler: *Using approximate string matching techniques to join street names of residential addresses*, Free University of Bozen-Bolzano, 2004.
- Manuel Steiner: *Integration of security aspects in an online maintenance tracking system*, Free University of Bozen-Bolzano, 2004.
- Jürgen Dellatorre: *Multichannel access to the building construction registry*, Free University of Bozen-Bolzano, 2004.
- Hannes Silbernagl: *Analysis of performance and synchronization aspects of Microsoft's dataset technology in a web-based application*, Free University of Bozen-Bolzano, 2004.
- Anna De Villa Tondo: *Evaluation of the accessibility of a web site to people with different handicaps: the case of Bolzano-Bozen municipality*, Free University of Bozen-Bolzano, 2004.

### **External Examiner/Reviewer**

- External reviewer for the Ph.D. thesis of Cristian Peraboni, University of Milan, March 2009.  
Thesis title: *eParticipation technologies to support digital citizenship*
- External reviewer and member of the Committee for the Ph.D. defence of Khadija Abied Ali, Faculty of Electrical Engineering, Czech Technical University in Prague, December 2008.  
Thesis title: *A temporal extension of XML*
- External examiner for the Ph.D. mid-term exam of Pensiri Manomaisupat at the University of Surrey, Department of Computing, UK, May 2004.  
Thesis title: *Automatic text categorisation using terminology resources*

## Professional Activities and Services

### Conferences: PC Chairs, PC Members, and Organization

- PC member of the *22th International Conference on Scientific and Statistical Database Management (SSDBM-10)*, June 30–July 2, 2010, Heidelberg, Germany.
- PC member of the *26th IEEE International Conference on Data Engineering (ICDE-10)*, March 1–6, 2010, Long Beach, California, USA.
- PC member of the *36th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM-10)*, January 23–29, 2010, Spindleruv Mlyn, Czech Republic.
- PC member of the Demo track of the *12th International Conference on Extending Database Technology (EDBT-09)*, March 23–26, 2009, Saint Petersburg, Russia.
- PC member of the *13th East-European Conference on Advances in Databases and Information Systems (ADBIS-09)*, September 7–11, 2009, Riga, Latvia.
- PC member of the *12th East-European Conference on Advances in Databases and Information Systems (ADBIS-08)*, September 5–9, 2008, Pori, Finland.
- PC member of the *15th International Symposium on Temporal Representation and Reasoning (TIME-08)*, Montreal, Canada, June 11–13, 2008.
- PC member of the *VLDB 2007 PhD Workshop*, September 23–24, 2007, Vienna, Austria.
- PC member of the *2nd International Conference on Knowledge Management in Organisations (KMO-07)*, September 10–11, 2007, Lecce, Italy.
- Member of the organization committee the *3<sup>rd</sup> eBZ-Workshop on e-Government*, jointly organized by the Free University and the Municipality of Bozen-Bolzano, October 11–12, 2006, Bozen-Bolzano, Italy.
- PC member of the *Track “Dienstleistungsprozesse im e-Government” of the Multi-Conference “Wirtschaftsinformatik 2006”*, February 22–22, 2006, Passau, Germany.
- PC member of the *First International Conference on Open Source Systems (OSS2005)*, July 11–15, 2005, Genova, Italy.
- PC co-chair and organization chair of the international *TED Conference on e-Government – Towards Electronic Democracy: The Challenge Ahead (TCGOV-2005)*, March 2–4, 2005, Bozen-Bolzano.
- General Chair of the *eMayor Clustering Event on Secure Information Processing in the Public Sector (SIPPS)*, March 4, 2005, Bozen-Bolzano, Italy (co-located with TCGOV-2005).

- PC co-chair and organization co-chair of the 2<sup>nd</sup> *eBZ-Workshop on e-Government*, jointly organized by the Free University and the Municipality of Bozen-Bolzano, March 3, 2005, Bozen-Bolzano, Italy (co-located with TCGOV-2005).
- PC co-chair and organization co-chair of the 1<sup>st</sup> *eBZ-Workshop on e-Government*, jointly organized by the Free University and the Municipality of Bozen-Bolzano, 2003, Bozen-Bolzano, Italy.
- PC member for the International Conference “*Rechtslinguistik des Deutschen und Italienischen: Ziele, Methoden, Ergebnisse (LinJus-99)*”, European Academy of Bozen-Bolzano, 1999, Bozen-Bolzano, Italy.
- PC chair and organization chair of the *Workshop on Corpus-Based Terminology*, European Academy of Bozen-Bolzano, 1998, Bozen-Bolzano, Italy.
- PC co-chair and organization co-chair of the *PhD Workshop at the 8th Austrian Artificial Intelligence Conference (FLAI'93)*, Linz, Austria, 1993.

### **Refereeing for Conferences and Journals**

- Conferences: SIGMOD-09, EDBT-09, ADBIS-08, TIME-08, VLDB-07, KMO-07, NWeSP-06, OSS-05, SIGMOD-04, IJCAI, LinJus-99
- Journals: TODS, SIGMOD Record, VLDBJ, AICOM, KI journal, AIM journal

### **Services at the Faculty of Computer Science, Free University of Bozen-Bolzano**

- President of the *Study Committee for the BSc in Applied Computer Science*: 2009/2010.
- Coordinator of the EURO-INF Trial Accreditation procedure for the Bachelor in Applied Computer Science, 2008.
- Member of the *Study Committee for the PhD in Computer Science*: 2004/2005 (cycle XX), 2005/2006 (cycle XXI), 2006/2007 (cycle XXII), 2007/2008 (cycle XXIII), 2008/2009 (cycle XXIV).
- Member of the *Selection Committee for the Admission to the PhD in Computer Science*: 2004/2005 (cycle XX), 2005/2006 (cycle XXI), 2006/2007 (cycle XXII), 2009/2010 (cycle XXV).
- Member of the *Study Committee for the BSc in Applied Computer Science*: 2003/2004, 2004/2005, 2005/2006, 2006/2007.
- Member of the *Committee for Exam Recognition and Student Exchange*: 2003/2004, 2004/2005, 2005/2006.
- Member of the *Selection Committee for External Teachers and Teaching Assistants*: 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009.

- Representative of the researcher in the *Faculty Council*: 2003/2004, 2005/2006, 2006/2007.
- Co-editor of the *Research Report 2001-2004*.
- Delegate member of the Faculty of Computer Science in the *Technical-Scientific Committee of the HTB Course in Practical Informatics* (“HTB Kurs Praktische Informatik”), Landesberufsschule für Handwerk und Industrie Bozen, 2002–2004, 2005–2008.
- Delegate member of the Faculty of Computer Science in the *Technical-Scientific Committee of the HTB Course for Database Developer* (“HTB Kurs Datenbankentwickler”), Landesberufsschule für Handwerk und Industrie Bozen, 2004–2005.
- Delegate member of the Faculty of Computer Science in the *Technical-Scientific Committee of the HTB Course for Network Technicians* (“HTB Kurs Netzwerktechniker”), Landesberufsschule Brixen, 2003–2008.
- Introductory lecture “Von Bits und Bytes zum grössten gemeinsamen Teiler” at the *Open Day* of the Free University of Bozen-Bolzano, 2003/2004, 2004/2005, 2005/2006, 2006/2007.
- Presentation of the Bachelor in Applied Computer Science at the *Information Day* at the Free University of Bozen-Bolzano, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008.
- Presentation of the Bachelor in Applied Computer Science at local high schools: *ITC Battisi di Bolzano, Liceo scientifico “Albert Einstein” di Merano, ITI di Merano*, 2003/2004, 2004/2005.
- Presentation “Über Bits und Bytes und die Mechanisierung des Rechnens” at the *Liceo scientifico* and *Gewerbeoberschule* of Meran, 2005.

## Memberships

- Member of ACM, IEEE and AAAI

## **References** (in alphabetical order)

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Johann Gamper