

Curriculum Vitae

Silvia Nittel

University of Maine, Orono
School of Computing and Information Science
Spatial Informatics Cluster and
National Center for Geographic Information Analysis
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Orono, ME 04467
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<nittel@spatial.maine.edu>

EDUCATION

Doctoral degree in Computer Science October, 1994
Institut für Informatik, University of Zurich, Switzerland
Title: *Storage Object Server Concepts for Configured DBMS*
Advisor: K.R. Dittrich, L. Richter, K. Bauknecht

Diplom-Informatiker (equivalent to a M.Sc. degree) 1989
University of Erlangen-Nürnberg, Germany

PROFESSIONAL EXPERIENCE

Associate Professor Sept 2007—present
School of Computing and Information Science, and National Center for Geographic Information and Analysis, University of Maine, Orono
Currently Associate Professor in the School of Computing and Information Science (formerly the Department of Spatial Information Science and Engineering and the Department of Computer Science). My research continues to focus on feature detection, monitoring and tracking using wireless geosensor networks. Another research emphasis is on communication protocols for mobile geosensor networks such as used in intelligent transportation or mobile ad-hoc ocean sensor networks or also situational emergency management. A third research emphasis is on data stream systems support for participatory sensing. My teaching includes spatial database systems, data stream system as well as geosensor networks.

Assistant Professor 2001—2007
Department of Spatial Information Science and Engineering and National Center of Geographic Information and Analysis, University of Maine, Orono
My research emphasis was on data management and spatial query support in energy-constrained, small-scale wireless geosensor networks. The main focus of the research was the generation of efficient and adaptive in-network query execution plans for decentralized and collaboration data aggregation and estimation in sensor networks, focusing on detecting and tracking continuous phenomena such as regions of air pollution or toxic clouds. My teaching included spatial database systems, information system architecture, the senior capstone project as well as selected section on wireless sensor networks in the NSF IGERT Sensor Foundation class.

Senior Research Associate 1998—2001
Computer Science Department, University of California, Los Angeles
Managed and conducted research for "ESP2NET: Earth Science Partners Private Network", a NASA-sponsored research project involving partners at six research sites in Southern California. The overall goal of the effort was the development of a collaborative scientific computing environment utilizing emerging

Internet technologies and state of the art scientific data mining tools. Collaborative science projects across research campuses provided the vehicle to validate the efficacy of my work. My research focus was on dynamic query optimization, and high performance scientific data mining.

Postdoctoral Researcher 1995—1997

Computer Science Department, University of California, Los Angeles

Worked as visiting postdoctoral researcher on the NASA-sponsored effort "Integrating Distributed Object Management Technology into EOSDIS". The primary focus of my research was in the area of spatial data management in the context of distributed systems and heterogeneous spatial data stores. Developed and implemented geoPOM (geoscientific Persistent Object Manager), a heterogeneous spatial database management system for data-store independent storage of spatial features. Developed and implemented several object management facilities for fine-grained spatial features utilizing a standardized distributed object management system (CORBA). The result is today the basis of OpenGIS Consortium's "CORBA API for Simple Features" Implementation Specification, an international industry standard. The work was co-authored by ESRI, Bentley Systems, and Oracle.

Research Associate 1989—1994

Institut für Informatik, University of Zurich, Switzerland

Performed research on storage system support for non-standard DBMS such as object-oriented DBMS (OODBMS) and extensible DBMS. Developed and implemented KIOSK, a storage object server that significantly enhances the performance of accessing, traversing and querying complex objects in non-standard DBMSs. Validated the performance gains offered by KIOSK through extensive performance benchmarking. Assessed the support of object-oriented operating systems for operating system-level DBMS storage management, and developed Frisbee, a DBMS-oriented single-level storage system component. Responsibilities at Zurich also included supervision of several M.S. graduate students regarding their thesis in the area of storage servers, and object-oriented operating systems.

Research Assistant 1986—1988

Institute for Manufacturing Automation and Production Systems, University of Erlangen, Germany

Designed and developed a database to store descriptive information and CAD models of manufacturing assembly robots. Assembly line modelers were able to query the DBMS to locate robots that met specific assembly line criteria.

BOOKS

"Advances in Geosensor Networks": S.Nittel, A. Labrinidis, and T. Stefanidis, Springer Lecture Notes in Computer Science(LNCS 4540), 2008.

Journal of Location-Based Services, Special Issue: Privacy-Aware and Location-Based Mobile Services, Editors: Duckham, M., Mokbel, M. and Nittel, S., Vol. 1(3), Taylor & Francis, September 2007.

Proceedings of International ACM Symposium on Geographic Information Systems (ACM-GIS06), Editors: S. Nittel and R. de By, Sheridan Publishers, Netherlands, 2006.

"Geosensor Networks", Editors: T. Stefanidis and S. Nittel, CRC Press, 2004.

Proceedings of International Conference "Scientific and Statistical Data Base Management" (SSDBM 2003), Editors: S. Nittel and D. Gunopulos, IEEE Computer Society Press, July, 2004.

"*Storage Object Server Concepts for Configured DBMS*", Nittel, S., *Ph.D. Thesis*, Institut für Informatik, Universität Zürich, August, 1994. (in German)

BOOK CHAPTERS

S. Nittel, "Geosensor Networks", in *Handbook of Geographic Information*, Ed: W. Kresse, Springer, Wolfgang Kresse, to be published in 2012.

Nittel, S. "Geosensor Networks", *Encyclopedia of Geography*, Ed: Barney Warf, Sage Publications, Inc, 2010, ISBN: 1-4129-5697-8

Nittel, S. "Geosensor Networks" *Encyclopedia of GIS*, Ed: Shekhar, Shashi; Xiong, Hui (Eds.) 2008, XL, 1377 p. 723, ISBN: 978-0-387-30858-6

A. Nural, S. Nittel and S. Winter, "Shared Ride Trips in Large Transportation Networks", In: Miller, H. (Ed.), *Societies and Cities in the Age of Instant Access*, Springer Press, ISBN-10: 1402054262, NL

Nittel, S., Ng, K., and Muntz, R., "Conquest: CONcurrent Queries over Space and Time", *International Workshop "Integrated Spatial Databases: Digital Images and GIS" (ISD'99)*, Portland, Maine, June, 1999.

REFEREED JOURNALS

Jung, Y.J., Ryu, K.R., Shin, M. S., and Nittel, S., "Historical Index Structure for reducing Insertion and Search Cost in LBS", *accepted for publication in International Journal of System and Software*, 2011.

Jiang, J., Worboys, M. and Nittel, S. "Qualitative Change Detection in Sensor Networks based on Connectivity Information", *Geoinformatica*, Volume 15, Issue 2, 2011, pp 305

Jin, G. and Nittel, S. "Efficient tracking of 2D objects with spatio-temporal properties in wireless sensor networks", *Journal of Parallel and Distributed Databases*, Vol 29(1-2), 2011, pp.3-30.

Nittel, S. "A Survey of Geosensor Networks: Advances in Dynamic Environmental Monitoring", *Sensors*, 9(7), 5664-5678; doi:10.3390/s90705664, 2009

Jin, G. and Nittel, S. "Towards Spatial Window Queries Over Continuous Phenomena in Sensor Networks", *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol 19(4), 2008, pp. 559-571.

Jin, G. and Nittel, S. "UDC: A self-adaptive uneven clustering protocol for dynamic sensor network", *International Journal of Sensor Networks*. Vol 2(1/2), 2007, pp 25-33.

Jin, G. and Nittel, S. "UDC: A self-adaptive uneven clustering protocol for dynamic sensor network", *International Journal of Sensor Networks*, (in press), 2006.

Nittel, S., Jin, G., and Shiraishi, Y. "In-Networks Spatial Query Estimation in Sensor Networks", *IEICE Transactions (A)*, Vol.J88-A (12), pp.1413-1421, December 2005.

Braverman A., Fetzer, E., Eldering, A., Nittel, S., and Leung, K., "Semi-Streaming Quantization for Remote-Sensing Data", *Journal of Computational and Graphical Statistics*, Vol 12(4), 2003.

Winter, S., and Nittel, S., "Abstraction and Formalization in the Spatial Domain", *International Journal of Geographic Information Science*, Vol 17(8), 2003.

Yang, J., Wang, W., Nittel, S., Muntz, R., and Busam, V., "Dynamo: Design, Implementation, and Evaluation of Cooperative Persistent Object Management in a Local Area Network" *Software: Practice and Experience, Special Issue on "Persistent Object Systems"*, Vol 30, No. 5, pp 419-448, May, 2000.

Mesrobian, E., Muntz, R., Shek, E., Nittel, S., LaRouche, M., Kriguer, M., Mechoso, C., Farrara, J., Stolorz, P. and Nakamura, H. "Mining Geophysical Data for Knowledge", *IEEE Expert, Intelligent Systems and their Applications*, IEEE Computer Society, Vol. 11, No.5, October 1996.

Nittel, S. "Relational and Object-Oriented DBMS for CIM Applications - a Comparison", *CIM-Management*, 6/89, Springer Verlag, September, 1989. (in German)

REFEREED CONFERENCES

King, K. and S. Nittel "Efficient Data Collection and Event Boundary Detection in Wireless Sensor Networks Using Tiny Models", in *Proceedings of International Conference on Geographic Information Science(GIScience)*, Zurich, Switzerland, September 2010.

Jin, G. and Nittel, S. "Supporting Spatio-Temporal Queries in Wireless Sensor Networks by Tracking Deformable 2D Objects", in *ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Los Angeles, CA, 2008

Y. J. Jung and S. Nittel, "Geosensor Data Abstraction for Environmental Monitoring Applications", in *Proceedings of International Conference on Geographic Information Science (GIScience)*, Park City, Utah, Springer LNCS, 2008.

Farah, C. , Zhong, C., Worboys, M. and Nittel, S. "Detecting Topological Change using Wireless Sensor Networks", in *Proceedings of International Conference on Geographic Information Science (GIScience)*, Park City, Utah, Springer LNCS.

Nittel, S., Trigoni, N., Ferentinos, K., Neville, F., Nural, A., and Pettigrew, N. "A drift-tolerant model for data management in ocean sensor networks", in *Proceedings of Mobile Data Engineering (MobiDE)*, in conjunction with SIGMOD, Beijing, China, 2007.

Jin, G. and Nittel, S. "UDC: A self-adaptive uneven clustering protocol for dynamic sensor network", in *International Conference on Mobile Ad-hoc and Sensor Networks (MSN)*, Wuhan, China, 13 - 15 December 2005.

- Duckham, M., Nittel, S. and Worboys, M., "Monitoring dynamic spatial fields using responsive geosensor networks", in ACM "Advanced in Geographic Information Systems" (ACM-GIS05), Bremen, Germany, November 2005.
- Nittel, S., Duckham, M. and L. Kulik, L., "Information Dissemination in Mobile Ad-hoc Geosensor Networks", *Third International Conference on Geographic Information Science (GIScience 2004)*, College Park, Maryland, October 2004, Springer Lecture Notes.
- Nittel, S., and Leung, K., "Parallelizing Clustering of Geoscientific Data Sets using Data Streams", *International Conference on "Scientific and Statistical Data Base Management" (SSDBM)*, Santorini, Greece, June, 2004.
- Nittel, S., Leung, K., and Braverman A., "Scaling K-Means for Massive Data Sets using Data Streams", *International Conference on Data Engineering (IDCE)*, Boston, MA, March 29-April 2 2004.
- Nittel, S., and Winter, S., "Formalization of Spatial Standards", *1st International Conference on Geographic Information Science (GIScience 2000)*, Savannah, Georgia, October, 2000.
- Yang, J., Wang, W., Muntz, R., and Nittel, S., "Dynamic Adaptive File Management in a Local Area Network", *20th International Conference on Distributed Computing Systems (ICDCS'2000)*, IEEE Proceedings, Taipei, Taiwan, April 10-13, 2000.
- Ng., K, Wang, Z., Muntz, R., and Nittel, S., "Dynamic Query Re-Optimization", *International Conference on Scientific and Statistical Databases (SSDBM99)*, Cleveland, Ohio, July, 1999.
- Yang, J., Nittel, S., Wang, W. and Muntz R., "DynamO: Dynamic Objects with Persistent Storage", *8th International Workshop on Persistent Object Systems (POS8)*, Tiburon, California, September, 1998.
- Nittel, S. and Muntz, R., "Supporting Interoperation of GIS Objects", *International Conference on Interoperating Geographic Information Systems (Interop'97)*, Santa Barbara, California, December, 1997.
- Nittel, S., Muntz, R., and Mesrobian, E. "geoPOM: A Heterogeneous Geoscientific Persistent Object System", *9th International Conference on Scientific and Statistical Database Management (SSDBM-97)*, Olympia, Washington, August, 1997.
- Nittel, S., Yang, J., and Muntz, R., "Mapping a Common Geoscientific Object Model to Heterogeneous Spatial Data Repositories", *Workshop on Advances in Geographic Information Systems (ACM-GIS'96)*, Rockville, Maryland, November, 1996.
- Mesrobian, E., Muntz, R., Shek, E., Nittel, S., LaRouche, M. and Kriguer, M., "OASIS: An EOSDIS science computing facility", *International Symposium on Optical Science, Engineering, and Instrumentation, (SPIE)*, Denver, Colorado, August, 1996.

Nittel, S., and Dittrich, K.R., "Storage Object Server Concepts for the Support of Complex Objects", *Workshop on Persistent Object Systems (POS)*, New Jersey, Springer Verlag, 1996.

Mesrobian, E., Muntz, R., Shek, E., Nittel, S., LaRouche, M. and Kriguer, M., "OASIS: An Open Architecture Scientific Information System", *6th International Workshop on Research Issues in Data Engineering (RIDE-96)*, New Orleans, La., February, 1996.

Nittel, S., "Application and Assessment of Object-Oriented Operating Systems for the Implementation of DBMS", *1. GI-Workshop "Datenbanksysteme und Betriebssysteme"*, 1./2. April, Heidelberg, GI-Datenbankrundbrief, Ausgabe 11, Mai, 1993. (in German)

Dittrich, K.R., Geppert, A., Goebel, V., Nittel, S., and Scherrer, S., "KIDS: A Declarative Approach to DBMS Construction", *Proc. of the Conf. of Database Research in Switzerland*, Sept 30 - Oct 1, Lausanne, 1991.

**NON-
REFEREED
CONFERENCES**

Jung, Y.J., Lee, Y. K., Lee, D. G., Ryu, K. H., and Nittel, S. "Air Pollution Monitoring System using Geosensor Networks", in *Proceedings of International Geoscience and Remote Sensing Symposium (IGARSS)*, Boston, MA, July 2008.

Nural, A., Nittel, S., Trigoni, N., and Pettigrew, N. (2007) A model for motion pattern discovery in ocean drifter networks, Coastal Environmental Sensing Networks Conference, Boston, MA, April 12-13 2007.

Winter, S. and Nittel, S. "Shared Ride TripPlanning in Geosensor Networks", In: *Simonis, I. (Ed.), GI-Days 2005*. Institute of Geoinformatics, University of Muenster, Germany, June 2005.

Nural, A., Nittel, S. and Winter, S. "Shared Ride Trips in Large Transportation Networks", In: Miller, H. (Ed.), *Symposium on Societies and Cities in the Age of Instant Access*, University of Utah, UT, November 2005.

Nittel, S., Stefanidis, A., Cruz, I., Egenhofer, M., Goldin, D., Howard, A., Labrinidis, A., Madden, S., Voisard, A., and M. Worboys, M., "Report from the First Workshop on Geo Sensor Networks", *SIGMOD Record, Special Issue on "Sensor Network Technology Infrastructure, Security, Data processing, and Deployment"*, Ed. Vijay Kumar, March, 2004.

Frank, C, Hornsby, K., and Nittel, S., "Designing Digital Travel Aids", *International Conference "GIScience"*, Boulder, CO, September, 2002.

Gowrisankar, H., and Nittel, S., "Reducing Uncertainty in Location Prediction of Moving Objects in Road Networks", *International Conference "GIScience"*, Boulder, CO, September, 2002.

Nittel, S., "Interoperable Spatial Data Services for the Earth Sciences", *UCLA, Computer Science Department, Technical report No. 200103*, February 2001.

Nittel, S., "Physical Pointer Swizzling", *OOPSLA95 Workshop on "OODBMS Behaviour, Benchmarks and Performance"*, Austin, Texas, October, 1995.

Scherrer, S., Nittel, S., Dittrich, K.R., Geppert, A., and Goebel, V., "The KIDS Approach to the Implementation of DBMS", *GI-Workshop*, Volkse, Mai, 1991.

KEYNOTES

"Geosensor Networks: New Challenges in Environmental Monitoring using Wireless Sensor Networks", *Conference "Sensing in a Changing World"*, Centre for Geo-Information, Wageningen, Netherlands, November 20, 2008.

"Geosensor Networks: State of the Art and Looking Ahead", at *Muenster GI-Days*, 2007 Muenster, Germany, September 2007.

"In-Network Spatial Query Estimation for Sensor Networks", at *Workshop on "Databases and Sensor Networks"*, Denki University, Tokyo, June 2005.

INVITED TALKS

"Decentralized coordination in emergency rescue situations", *2nd Workshop on Research Directions in Situational-Aware Self-managed Proactive Computing in Wireless Sensor Networks*, in Conjunction with Mobile Data Management, May 2010, Kansas City, USA May 22 2010.

"Advances in Geosensor Networks", *Workshop on Geospatial Information for Developing Countries: Science and Technology*, IIT Bombay India, December 16-18, 2009.

"Geosensor Networks: State of the Art", *Computing Lab, Oxford University*, Oxford, UK, October 3 2008.

"Geosensor Networks: State of the Art", *Computing Lab, Cambridge University*, Cambridge, UK, October 1 2008.

"Geosensor Networks: State of the Art", *Computer Science Department, Chungji University*, Cheongjy, Korea, June 2008.

"Geosensor Networks: A Vision Perspective", *Invited Workshop on "Ubiquitous Spatial Computing"*, Portland, ME, January 2007.

"Spatial Query Estimation in Sensor Networks", *Department of Geomatics, University of Melbourne, Australia*, March 16, 2006.

"In-Network Spatial Query Estimation for Sensor Networks", *Dagstuhl Seminar, "Spatial Data: mining, processing and communicating"*, Wadern, Germany, March 7 2006.

"Research Direction in Geosensor Networks", in *First South African Workshop on Sensor Web Enablement*, Pretoria, March 3-4 2005.

"Geospatial Analysis in Resource Constrained Environments", *20th Congress of International Society of Photogrammetry and Remote Sensing*, Istanbul, Turkey, July 2004.

"Data Management for Small-Scale Sensor Network", *EE Graduate Colloquium, University of Maine*, April 19 2004.

"Data Sharing, Publication and Intellectual Property Issues", Invited Presenta-

tion, *National Science Board Workshop on "Policies for Long-Lived Data Collections"*, March 24 2004.

"Sensor-based Information Systems from a GIS Perspective", *Dagstuhl Seminar on "Computational Cartography and Spatial Modelling"*, October 1 2003.

"The Role of Standards in SEEDS", *Second Public NASA Workshop on "Strategic Evolution for Earth Science Data Systems"*, San Diego, June 18, 2002.

"Conquest: CONCurrent Queries in Space and Time", *NASA Jet Propulsion Laboratory*, Pasadena, CA, July, 1999.

"Application and Assessment of Object-Oriented Operating Systems for the Implementation of DBMS", *University of Darmstadt*, Germany, December, 1993.

**EDITORIAL
ACTIVITIES**

Editor, for "Geosensor Networks", in *Encyclopedia of GIS*, Eds: 2008
Shekhar, Shashi; Xiong, Hui (Eds.), XL, 1377 p. 723,
ISBN: 978-0-387-30858-6.

Editor for "Geosensor Networks", in *Encyclopedia of Geography*, Ed: 2010
Barney Warf, Sage Publications, Inc, ISBN: 1-4129-5697-8.

Editorial Review Board, Proceedings of VLDB Endowment 2011

Editorial Review Board, Proceedings of VLDB Endowment 2012

**CONFERENCE
ORGANIZATION**

Steering Committee, Third International Conference on Geosensor Networks (GSN3.0), Oxford, UK, July 2009. 2009

PC and General Co-Chair, 1st International Workshop on Privacy-Aware Location-Based Mobile Services (PALMS'07), in conjunction with Mobile Data Management, Mannheim, Germany, May 2007. 2007

General and Program Co-Chair for ACM "Advances in Geographic Information Systems" (ACM-GIS 2006), Arlington, VA, Nov 11-13 2006. 2006

General and Program Co-Chair for Conference "Geosensor Networks" (GSN20.), Boston, MA, Oct 1-3 2006. 2006

General and Program Co-Chair for Workshop "Mobile Location-Aware Sensor Networks", in conjunction with *Mobile Data Management*, Nara, Japan, May 13 2006. 2006

General and Program Co-Chair for Location-Privacy Workshop Schoodic Island, ME, August 5-7 2004. 2004

General and Program Co-Chair for 1st Workshop "Geosensor Networks" Portland, ME, October 9-11 2003. 2003

General and Program Co-Chair for 13th International Conference "Statistical and Scientific Databases (SSDBM), July 2003, Cambridge, MA 2003

Host and Organizer of 18th Open Geospatial Consortium (OGC)
Technical Meeting, Los Angeles Dec 1999

Host and Organizer of NASA Federation Technical Meeting Aug 1999

**JOURNAL
REVIEWS**

Computer Journal
Journal of Intelligent Information Systems, Springer
International Journal on Advances of Computer Science for Geographic Information Systems (Geoinformatica), Springer
International Journal of Knowledge and Information Systems, Springer
International Journal of Location-based Services, Springer
International Journal of Wireless Networks, Springer
IEEE Transaction on Data and Knowledge Engineering
IEEE Transaction on Parallel and Distributed Systems
International Journal of Geographical Information Science, Taylor and Francis
Spatial Cognition and Computation, Taylor and Francis
International Journal of Digital Earth, Taylor and Francis
Sensors Journal, MDPI open access

**PROGRAM
COMMITTEES**

PC, 38th International Conference on Very Large Data Bases (VLDB 2012), August 28-20 2012, Istanbul, Turkey
PC, 13th International Conference on Mobile Data Management (MDM 2012) to be held July 23-26, 2012 in Bangalore, India
PC, IEEE International Conference on Data Engineering (ICDE 2012) to be held April 1-5, 2012 in Washington, DC, USA
PC, 19th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS), November 1st to 4th in Chicago, Illinois, USA.
PC, 2nd International Workshop on GeoStreaming (IWGS), in conjunction with the 19th ACM SIGSPATIAL GIS 2011, November 1st to 4th in Chicago, Illinois, USA.
PC, Workshop "Cognitive Engineering for Mobile GIS", in conjunction with COSIT 2011, Belfast, Maine, September 2011
PC, 37th International Conference on Very Large Data Bases (VLDB), August 2011, Seattle, WA USA
PC, Workshop "Data Management for Sensor Networks" (DMSN), in conjunction with VLDB, Seattle, WA, 2011
PC, 23th International Conference on Scientific and Statistical Database Management (SSDBM 2010), July 2-22, Portland, OR.
PC, 17th International Conference on Mobile Data Management (MDM 2011), June 6-9 2011, Lulea, Sweden.
PC, 18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS), November 2-5 2010, San Jose, CA
PC, 1st International Workshop on GeoStreaming, in conjunction with ACM GIS, November 2-5 2010, San Jose, CA
PC, International Conference on Mobile Data Management (MDM 2010), May 23-26 2010, Kansas City, Missouri
PC, International Conference on Scientific and Statistical Database Management (SSDBM 2010), June 30 July 2, Heidelberg, Germany.
PC, 17th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS) 2009, Nov, Seattle, WA.
PC, 35th International Conference on Very Large Data Bases (VLDB 2009), August 24-28 2009, Lyon, France.

PC, Workshop "Data Management for Sensor Networks" (DMSN), in conjunction with VLDB, Lyon, France, August 2008

PC, 1st International Workshop on "Data Warehousing and Knowledge Discovery from Sensors and Streams" (DKSS 2009), in conjunction with the 5th International Conference on Distributed Computing in Sensor Systems (DCOSS 2009), Marina del Rey, CA, June 8-10 2009.

PC, 10th International Conference Mobile Data Management (MDM 2009), May 18-21 2009, Taipei, Taiwan.

PC, MDM-Workshop Indoor Spatial Awareness (MDM 2009), May 18 2009, Taipei, Taiwan.

PC, 16th International ACM Conference on Geographic Information Systems (ACM-GIS 2008), Los Angeles, CA, Nov 5-7 2008.

PC, 5th International Workshop Data Management in Sensor Networks, in conjunction with VLDB, Auckland, New Zealand, Aug 25 2008.

PC, 20th International Conference on Scientific and Statistical Databases (SS-DBM 2008), Hong Kong, China, July, 2008.

PC, 7th ACM International Workshop on Data Engineering for Mobile and Wireless Access (MobiDE08), in conjunction with SIGMOD, Vancouver, Canada, June 2008.

PC, 24th International Conference on Data Engineering (ICDE 2008), Cancun, Mexico, April 7-11, 2008.

PC, Environmental Sensor Networks (ESNs) Workshop, in conjunction with 18th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, Athens, Greece, September 7 2007.

PC, Workshop "Data Management for Sensor Networks", in conjunction with VLDB, Vienna, Austria, September 2007.

PC, 33rd International Conference Very Large Data Bases (VLDB), Vienna, Austria, September 2007. PC, 19th International Conference Scientific and Statistical Database Systems (SSDBM), Banff, Canada, July 2007

PC, 23rd International Conference on Data Engineering (ICDE 2007), Istanbul, Turkey, April 17-20 (tentative), 2007.

PC, 6th International Symposium on Web and Wireless Geographical Information Systems (W2GIS 2006), December 4 - 5, 2006, Hong Kong

PC, Workshop "Mining Spatial and Spatio-Temporal Data" (SSTDM), Hong Kong, December 18, 2006.

PC, Workshop on Middleware for Sensor Networks, in conjunction with 7th ACM/IFIP/USENIX Middleware Conference, Melbourne, Australia, Nov 2006.

PC, 3rd VLDB-Workshop "Data Management for Sensor Networks" (DMSN'06), Seoul, Korea, Sept 11, 2006.

PC, 1st Workshop on Mobile Geospatial Augmented Reality (AR), May 29-30 2006, Banff, Alberta, Canada.

PC, International Workshop on Networked Sensing Systems (INSS), Chicago, USA, May 31-June 2 2006.

PC, 2nd VLDB-Workshop "Data Management for Sensor Networks", Trondheim, Norway, September 2005.

PC, 5th International Workshop on Web and Wireless GIS (W2GIS05), Lausanne, Switzerland, December 15-16 2005

PC, ACM 13th International Symposium of Advances in Geographic Information Systems (ACM-GIS 2005).

PC, 4th International ACM Workshop on Data Engineering for Wireless and Mobile Access (MobiDE '05), in conjunction with SIGMOD, Baltimore, MD, June 12th 2005.

PC, "Geosensor Networks from research to applications, June 23rd - 24th, Munster GI-Days, Germany, 2005.

PC, Symposium on Spatio-Temporal Databases (SSTD'05), Angra, Brazil, August 22-24 2005
 PC, "Geosensor networks from research to applications", Munster GI-Days, Germany, June 2005
 PC, International Conference "Scientific and Statistical Database Systems", Santa Barbara, CA 2005
 PC, International Workshop on "Networked Sensing Systems", California, 2005
 PC, ACM-GIS 2004
 PC, VLDB Workshop "Data Management for Sensor Networks" 2004
 PC, SIAM Workshop "Data Mining in Resource Constraint Environments", Florida, April 2004.
 External Reviewer, International Conference on "Very Large Databases", 2003
 Reviewer for Journal "Spatial Cognition and Computation", 2003
 Reviewer for Journal "Information Systems", 2003
 Reviewer for "Next Generation Data Mining" Book, AAAI/MIT Press, 2003
 External Reviewer Conference on Distributed Computing Systems, 2003
 External Reviewer ACM Operating Systems Design and Implementation, 2002
 External Reviewer ACM Multimedia, 2002
 PC, ACM-GIS 2002

**PROFESSIONAL
 ACTIVITIES**

Invited to 2nd Workshop on Research Directions in Situational-Aware Self-managed Proactive Computing in Wireless Sensor Networks, in Conjunction with Mobile Data Management, Kansas City, USA 2010

Invited participant and speaker, NSF Workshop on Geospatial Information for Developing Countries: Science and Technology, IIT Bombay, India. December 2009

Computing Lab, Cambridge University, Cambridge, UK October 2008

Computing Lab, Cambridge University, Cambridge, UK October 2008

Computing Lab, Oxford University, Oxford, UK October 2008

Invited to Department of Computer Science, Chungji University, Cheongjy, Korea June 2008

Invited to Muenster GI-Days, Germany September 2007

Invited Member to NTB Study, Arlington, VA September 2007

Invited to NSF-sponsored Workshop on "Mobile Adhoc Sensor Networks", Pittsburgh, PA January 2007

Invited to NCGIA-Workshop on "Ubiquitous Spatial Computing", Portland, ME. January 2007

Invited to the NSF Workshop "Development of new research directions at the intersection of the Information/Intelligent Systems (IIS) and the Global Environment for Networking Innovations (GENI) Programs", Arlington, VA October 2006

Spatial Information Science Seminar, Geomatics Department, University of Melbourne March 2006

| | |
|---|---------------|
| Invited to Workshop on "Databases and Sensor Networks", Denki University, Tokyo | June 2005 |
| Invited to "First South African Workshop on Sensor Web Enablement", Pretoria, South Africa | February 2005 |
| Invited Panelist to NSB Study, Arlington, VA | March 2004 |
| Session Chair for Data Streams, "Interface" Conference 2003 | 2003 |
| Elected Member, Finance Committee, NASA Federation | 2002—2003 |
| Invited Participant to NRC Study | April 2002 |
| Invited Participant to NASA ESTO AIST Workshop. | January 2002 |
| Panel Organizer for SSDBM 2001. | July 2001 |
| Vice-Chair, InterCom Standing Committee, NASA Federation. | 2000—2001 |
| Member of the NASA Federation Tiger Team. | 1999—2000 |
| Panel Participant at SSDBM 1999 | July 1999 |
| Co-Author and Editor of the OGC SF CORBA Specification | 1997-2000 |
| Faculty Graduate Student Representative Institut für Informatik, University of Zurich, Switzerland | 1989-1994 |

PROFESSIONAL SOCIETIES Association for Computing Machinery
IEEE Computer Society
ACM SIGSPATIAL
ACM SIGMOD

UNIVERSITY SERVICE NSF IGERT "Sensor Science Engineering and Informatics" 2007-present
Executive Committee, University of Maine
Academic Council, College of Engineering, University of Maine 2007—2011
Presidential Public Service Award Committee, University of Maine 2010-present
Undergraduate Curriculum Committee, School of Computing and Information Science, University of Maine 2011-present

TEACHING EXPERIENCE Associate Professor 2007-present
Dept. Spatial Information Science & Engineering, University of Maine
2011 SIE 598 Data Stream Management
2011 SIE 555 Spatial Database Systems
2010 INT 598 101 Sensor Foundations (selected chapters)
2010 SIE 555 Spatial Database Systems
2010 ISE 450 Senior Capstone Project
2010 SIE 507 Information Systems Software Engineering
2009 INT 598 101 Sensor Foundations (selected chapters)
2009 SIE 555 Spatial Database Systems
2009 ISE 403 Spatial Database Systems
2009 ISE 401 Information System Architecture
2009 ISE 450 Senior Capstone Project

2009 SIE 556 Information System Architecture
2008 ISE 403 Spatial Database Systems
2008 SIE 555 Spatial Database Systems
2008 ISE 303 Human Computer Interfaces
2008 ISE 305 Digital Video Analysis
2007 ISE 401 Information System Architecture
2007 ISE 450 Senior Capstone Project
2007 SIE 556 Information System Architecture
2007 INT 598 101 Sensor Foundations (*selected chapters*)
2007 SIE 555 Spatial Database Systems
2007 ISE 403 Spatial Database Systems
2007 ISE 451 Senior Capstone Project

Assistant Professor

2001-2007

Dept. Spatial Information Science & Engineering, University of Maine

2006 SIE 556 Information System Architecture
2006 ISE 403 Information System Architecture
2006 INT 598 101 Sensor Foundations (*selected chapters*)
2006 ISE 403 Spatial Database Systems
2006 SIE 555 Spatial Database Systems
2005 SIE 556 Information System Architecture
2005 ISE 403 Information System Architecture
2005 SIE 555 Spatial Database Systems
2004 SIE 556 Information System Architecture
2004 SIE 555 Spatial Database Systems
2004 MAT 500 Computational Genomics (Database Section)
2003 SIE 598 Pervasive Computing
2003 MAT 500 Computational Genomics (Database Section)
2003 SIE 555 Spatial Database Systems
2002 SIE 598 Distributed Information Systems
2002 MAT 500 Computational Genomics (Database Section)
2002 SIE 555 Spatial Database Systems

Lecturer

2000

Computer Science Department, University of California, Los Angeles
2000 CS 143 Introduction to Database Systems

Teaching Associate

1989-1994

Institut für Informatik, University of Zurich, Switzerland

1994 Prototyping-Oriented Software Development: Concepts and Tools
1992 Concepts for Storage Object Servers in Nonstandard DBMS
1992 Tools for Software Engineering
1991 Prototyping-Oriented Software Development
1990 Information Systems
1990 Software Engineering

Lecturer for "Software Engineering" (2 terms)

1990-1991

Engineering School St. Gallen, St. Gallen, Switzerland

**INDUSTRY
EXPERIENCE**

Software Engineer

March-June 1988

Straessle Informationssysteme, Zürich, Switzerland

Full-time position in the database group of a CAD system company. Participating in the design and implementation of the connection between the CAD system CONCAD and ORACLE.

Software Engineer

March-May 1987

CONTRAVES, Zürich, Switzerland

Full-time position in the database group of the CAD system development department. Design of an robot information system using a CAD system in combination with a database system.