

# M. Tamer Özsu

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- PERSONAL DATA**
- ◇ **Birth place and date:** Turkey, 18 March 1951
  - ◇ **Citizenship:** Dual Canadian & Turkish
  - ◇ **Marital status:** Married, one son, one grandson
- EDUCATION**
- ◇ **The Ohio State University**, Columbus, Ohio, USA  
Ph.D., Computer and Information Science, 1983
  - ◇ **The Ohio State University**, Columbus, Ohio, USA  
M.S., Computer and Information Science, 1981
  - ◇ **Middle East Technical University**, Ankara, Turkey  
M.Sc., Industrial Engineering, 1978
  - ◇ **Middle East Technical University**, Ankara, Turkey  
B.Sc., Industrial Engineering, 1974
- AWARDS & HONOURS**
- Fellow, Association for Computing Machinery (ACM), 2006
  - Fellow, Institute of Electrical and Electronics Engineers (IEEE), 2011
  - ACM Distinguished Lecturer, 2007–present
  - IBM CAS Canada Research Faculty Fellow, 2010–present
  - University of Waterloo Outstanding Performance Award, 2004 & 2009
  - Ohio State University College of Engineering Distinguished Alumnus Award, 2008
  - ACM SIGMOD (Special Interest Group on Management of Data) Contributions Award, 2006
  - University Research Chair, University of Waterloo, 2004–2011
  - Faculty of Mathematics Fellow, University of Waterloo, 2000–2003
  - McCalla Professor, University of Alberta, 1993–1994
  - Sigma Xi – Scientific Research Society Member
  - NATO Ph.D. scholarship, through TÜBİTAK – The Scientific and Technical Research Council of Turkey, 1979–1983
  - Best Paper Award Honorable Mention, 29th Int. Conf. on Data Engineering, 2013
- PROFESSIONAL ASSOCIATIONS**
- ACM – Association for Computing Machinery (Fellow)
  - IEEE – Institute of Electrical and Electronic Engineers (Fellow)
  - American Association for the Advancement of Science
- RESEARCH INTERESTS**
- My research is on data management with a focus on two threads:

◇ **Application of database technology to non-traditional data types**

Data types I have studied include multimedia data, temporal data, time series data, spatial data, XML, streaming data, graph data, RDF data (the last two are the ones that I currently investigate).

◇ **Distributed data management of the above data types**

Most recent work addresses streaming data and distributed XML processing. Current work focuses on distributed graph management and processing algorithms.

EMPLOYMENT

- ◇ **July 2000 – present:** University of Waterloo, Canada  
Professor of Computer Science
- ◇ **January 2007 – June 2010:** University of Waterloo, Canada  
Director, David R. Cheriton School of Computing Science
- ◇ **July 2000 – June 2005:** University of Alberta  
Adjunct Professor
- ◇ **July 1993 – June 2000:** University of Alberta, Canada  
Professor of Computing Science
- ◇ **July 1994 – June 1995; February – March 2000:** University of Alberta, Canada  
Acting Chair, Department of Computing Science
- ◇ **July 1989 – June 1993:** University of Alberta, Canada  
Associate Professor of Computing Science
- ◇ **July 1984 – June 1989:** University of Alberta, Canada  
Assistant Professor of Computing Science
- ◇ **March 1983 – July 1984:** Independent Computer Consultant specializing on database systems and information system design.
- ◇ **September 1981 – March 1983:** Ohio State University, Columbus, OH  
Graduate Teaching Associate (taught introductory computing courses emphasizing PL/I and FORTRAN)
- ◇ **January 1981 – September 1981:** Ohio State University, Columbus, OH  
Graduate Research Associate
- ◇ **March 1979 – January 1980:** Technicare, Inc., Solon, Ohio, USA  
Part-Time Programmer/Analyst (developed and implemented a software simulator for the CT Scanners that the company used to build)
- ◇ **June 1977 – January 1979:** TÜMOSAN Turkish Motor Industries and Trade Corp., Ankara, Turkey  
Industrial Engineer/Systems Analyst at R&D Department
- ◇ **March 1976 – June 1977:** In-plant Training Centre for Engineers, a joint project of UNIDO (United Nations Industrial Development Organization) and Turkish Ministry of Industry and Technology.  
Industrial Engineering and System Analysis Expert
- ◇ **1975 – March 1976:** Postal, Telephone and Telegraph (PTT) Administration, Ankara, Turkey  
Industrial Engineer, Electronic Data Processing Dept.

VISITING POSITIONS

- ◇ **September 2011 – March 2011:** Eidgenössische Technische Hochschule (ETH), Zürich, Department of Computer Science, Switzerland  
Visiting Professor
- ◇ **August 2010 – March 2011:** National University of Singapore, School of Computing, Singapore  
KITHCT Visiting Professor
- ◇ **September – December 2006:** National University of Singapore, School of Computing, Singapore  
Visiting Professor

- ◇ **March – June 2006:** Eidgenössische Technische Hochschule (ETH), Zürich, Department of Computer Science, Switzerland  
Visiting Professor
- ◇ **April – May 2005:** National University of Singapore, School of Computing, Singapore  
Visiting Professor
- ◇ **May 1998:** University of Milano, Italy  
Visiting Professor
- ◇ **January 1998 – March 1998:** GMD-IPSI, Darmstadt, Germany  
Visiting Scientist
- ◇ **September 1997 – December 1997:** INRIA Rocquencourt, Le Chesnay, France  
Visiting Scientist
- ◇ **July 1990 – June 1991:** GTE Laboratories, Waltham, MA, USA  
Visiting Scientist

TEACHING  
EXPERIENCE

- ◇ **Undergraduate Courses:**
  - Distributed Systems (University of Waterloo)
  - Introduction to Database Management (University of Waterloo)
  - Introduction to File and Database Systems (University of Alberta)
  - Database Management Systems (University of Alberta)
  - Telecommunications and Computers (University of Alberta)
  - Modeling and Analysis of Computer Systems (University of Alberta)
  - Switching Theory and Logical Design (University of Alberta)
  - Elements of Programming I (University of Alberta)
  - Introduction to Business Computing (University of Alberta)
  - Programming and Algorithms I (The Ohio State University)
  - Introduction to Programming (The Ohio State University)
  - Management Information Systems (Middle East Technical University, Turkey)
  - Database Systems (Middle East Technical University, Turkey)
- ◇ **Graduate Courses**
  - Parallel and Distributed Database Systems (University of Waterloo)
  - System and Network Architectures and Implementation (University of Waterloo)
  - Parallel and Distributed Databases (National University of Singapore)
  - Parallel and Distributed Databases (ETH Zürich)
  - Internet-Scale Distributed Data Management (University of Waterloo)
  - Web Data Management (University of Waterloo)
  - Distributed Database Systems (University of Waterloo & University of Alberta)
  - Advanced Computer Architectures (University of Alberta)

PROFESSIONAL  
ACTIVITIES

- ◇ **Advisory Boards**
  - International Advisory Board Member, National Institute of Informatics (NII), Tokyo, Japan, 2011 – present.
  - Advisory Board Member, Hong Kong University of Science and Technology, School of Engineering, 2009 – present.

- Advisory Board Member, Hong Kong University of Science and Technology, Department of Computer Science and Engineering, 2009 – 2012.

◇ **Professional Societies**

- Member, Computing Research Association (CRA) Board, Canadian Association of Computer Science (CACS/AIC) Representative, 2009 – present.
- Member, ACM Publications Board, 2003 – present; Vice-Chair for New Publications, 2007 – present.
- Chair, ACM Special Interest Group on Data Management – SIGMOD (<http://www.sigmod.org>), 2001 – 2005.
- Trustee, VLDB Endowment (<http://www.vldb.org>), 1996 – 2002.
- Board Member, International Federation for Cooperative Information Systems, 1999 – 2002.

◇ **Program Reviews**

- External Review Committee Member, Department of Computer Science, University of British Columbia, 2010.
- External Review Committee Member, Computer Science Department, University of California, Santa Barbara, 2001.
- Consultant, Ontario Council for Graduate Studies to review the graduate program at Department of Computer Science, York University, 2001.

◇ **Others**

- Major Project Leader & Member of Programme Committee, Canadian Institute for Telecommunications Research, 1998 – 2000.
- ◇ Founding Board Member, Edmonton New Media, 1996 – 1997.
- ◇ Founding Director, Research Institute for Multimedia Systems, University of Alberta, 1996 – 1997.
- ◇ Member and Chair of the Grant Selection Committee, Natural Sciences & Engineering Research Council of Canada (<http://www.nserc.ca>), 1991–1994.
- ◇ Member of the Management Committee, Canadian Genome Analysis & Technology Program, 1992 – 1993.

SCIENTIFIC  
ACTIVITIES

◇ **Book Series:**

- Series Editor, *Synthesis Lectures on Data Management*, Morgan & Claypool, 2009 – present. Series home page: <http://www.morganclaypool.com/toc/dtm/1/1>
- Co-Editor-in-Chief, *Encyclopedia of Database Systems*, Springer, 2009. The second edition is currently being prepared.

- Editorial Board Member, *Advanced Information and Knowledge Processing*, Springer.
- Editorial Board Member, *Web Information Systems Engineering and Internet Technologies*, Springer.

◇ **Journal Activities:**

- Editorial Board Member, *Information Technology and Management*, Springer, 2000 – present.
- Editorial Board Member, *World Wide Web Journal - Internet and Web Information Systems*, Springer, 2001 – present.
- Editorial Board Member, *Journal of Information and Data Management*, Brazilian Computer Society, 2010 – present.
- Senior Advisory Board Member, *ACM Journal on Data and Information Quality*, ACM, 2007 – present.
- Advisory Board Member, *International Journal for Next-Generation Computing*, 2011 – present.
- Editorial Board Member, *Distributed and Parallel Databases*, Springer, 1993 – 2012.
- Associate Editor, *ACM Computing Surveys*, 2005 – 2010.
- Editor-in-Chief, *The VLDB Journal*, VLDB Endowment/Springer, 1997 – 2005. Between 2001 – 2005: Coordinating Editor-in-Chief.
- Editorial Board Member, *SIGMOD DiSC (Digital Symposium Collection)*, ACM SIGMOD, 1998 – 2001.
- Editorial Board Member, *SIGMOD Digital Review*, ACM SIGMOD, 1999 – 2001.
- Editorial Board Member, *The VLDB Journal*, VLDB Endowment/Springer, 1994 – 1997.
- Editorial Board Member, *Parallel and Distributed Technology: Systems and Applications*, IEEE Computer Society, 1992 – 1996. Title later changed to *Concurrency*.
- Guest Editor (with Qing Li), Special issue on Web Media Information Systems, *World Wide Web Journal*, 5(3), 2002.
- Guest Editor (with Stavros Christodoulakis), Special issue on Multimedia Data Management, *The VLDB Journal*, 8(1), 1999.
- Guest Editor (with Elisa Bertino), Special issue on Distributed/Parallel Object Management, *Distributed and Parallel Databases – An International Journal*, 2(1), 1994.
- Guest Editor, *INFOR*, 26(4), 1988 and 27(2), 1989.
- Guest Editor, *Canadian Information Processing*, July/August 1992.

◇ **Conference/Symposia/Workshop Activities:**

*General Chair/Co-Chair:*

- *7th International Conference on Web Information Systems Engineering (WISE)*: 2006.
- *14th Conference on Advanced Information Systems Engineering (CAiSE)*: 2002.
- *International Workshop on Issues and Applications of Database Technology (IADT)*: 1998.
- *International Conference on Computing and Information*: 1998.
- *International Workshop on Distributed Object Management*: 1992.

*Program Committee Chair/Co-Chair:*

- *International Conference on Very Large Data Bases (VLDB)*: 2004.
- *International Conference on Data Engineering (ICDE)*: 2007, 2001 (Industrial Program Co-PC Chair).
- *ACM SIGMOD/PODS PhD Symposium*: 2012.

- *International Workshop on Graph Databases (IWDG)*: 2010.
- *International Workshop on Semantic Web and Databases (SWDB)*: 2006.
- *International Database Engineering & Applications Symposium (IDEAS)*: 2002.
- *2nd International Conference on Web Information Systems Engineering (WISE)*: 2001.
- *Fourth International Workshop on Multimedia Information Systems (MIS)*: 1998.
- *Fifth International Conference on Information and Knowledge Management (CIKM)*: 1996.
- *Fifth International Workshop on Research Issues in Data Engineering: Distributed Object Management (RIDE-DOM)*: 1995.
- *CIPS (Canadian Information Processing Society) Edmonton Conference*: 1987.

*Program Committee Vice-Chair/Area Chair:*

- *ACM SIGMOD International Conference on Management of Data*: 2013.
- *IEEE International Conference on Distributed Computing Systems*: 1992, 1996.
- *IEEE International Conference on Data Engineering*: 1993, 2003, 2006, 2011.
- *Workshop on Parallel and Distributed Database Systems* (as part of EURO-PAR): 1997.

*Program Committee Member:*

- *International Conference on Very Large Data Bases (VLDB)*: 1992, 1993, 1995, 1997, 1999, 2002, 2009, 2010, 2012, 2013, 2014.
- *ACM International Conference on Management of Data (SIGMOD)*: 1994, 1996, 1999, 2007, 2008, 2009, 2010.
- *IEEE International Conference on Data Engineering (ICDE)*: 1991, 1996, 1997, 1999, 2000, 2002, 2004, 2012.
- *International Conference on Extending Database Technology (EDBT)*: 2006, 2008, 2009.
- *International World Wide Web Conference (WWW)*: 2007.
- *IEEE International Conference on Multimedia Computing and Systems (ICMCS)*: 1996, 1997, 1999.
- *Database Management and Application over Networks (DBMAN)*: 2007.
- *International Workshop on End-to-End Management of Big Data*: 2012.
- *IEEE International Conference on Data Mining (ICDM)*: 2001.
- *ACM International Conference on Knowledge and Data Discovery (KDD)*: 2001.
- *Conference on Advanced Information Systems Engineering (CAiSE)*: 2003
- *International Conference on Web Information Systems Engineering (WISE)*: 2005.
- *International Conference on Information and Knowledge Management (CIKM)*: 1995, 1998, 2012 (Senior Program Committee).
- *International Conference on Cooperative and Interoperable Information Systems (CoopIS)*: 1998, 2000, 2001.
- *International Conference on Database Systems for Advanced Applications (DASFAA)*: 2005.
- *International Conference on Distributed Computing Systems (ICDCS)*: 1993, 1994, 1998, 2002, 2006.
- *ACM/IFIP/USENIX 7th International Middleware Conference (Middleware)*: 2006, 2007.
- *Fourth International XML Database Symposium (XSym)*: 2006.
- *International Workshop on Research Issues in Data Engineering (RIDE)*: 1993, 1996, 1997, 1998, 1999, 2001, 2002.
- *Third International Workshop on Networks Meets Databases (NetDB)*: 2007.

- *IEEE Workshop on Information & Software as Services (WISS)*: 2009, 2010.
- *European Conference on Object Oriented Programming (ECOOP)*: 2000.
- *International Workshop on Database Technologies for Handling XML Information on the Web*: 2006.
- *2nd International Workshop on Information Quality in Information Systems*: 2005.
- *Brazilian Symposium on Databases (SBBD)*: 2004, 2005, 2006, 2007.
- *International Symposium on Computer and Information Sciences (ISCIS)*, 2004, 2005, 2007.
- *IFIP 2.6 Working Conference on Data on Semantics Issues in Multimedia Semantics (DS)*: 1999, 2001.
- *International Workshop on Persistent Object Systems (POS)*: 1994, 1998, 2000.
- *IFIP 2.6 Working Conference on Visual Database Systems (VDB)*: 1998, 2000.
- *International Symposium (formerly Workshop) on Temporal Representation and Reasoning (TIME)*: 2001.
- *Third International Symposium on Cooperative Database Systems for Advanced Applications (CODAS)*: 2001.
- *International Conference on Advances in Visual Interfaces (AVI)*: 2000.
- *International Symposium on Distributed Object and Applications (DOA)*: 1999, 2000.
- *International Conference on Applications of Databases (ADB)*: 1994, 1995.
- *International Conference on Parallel and Distributed Information Systems (PDIS)*: 1994.
- *International Conference on Computer Communications and Networks*: 1995, 1996.
- *International Workshop on Multimedia Information Systems (MIS)*: 1999, 2001, 2005.
- *International Workshop on Interacting with Databases (IDA)*: 2000.
- *IBM CASCON Conference*: 1998.
- *IEEE Knowledge and Data Engineering Exchange Workshop*: 1997.
- *International Conference on Management of Data*: 1994. (India)
- *International Symposium on Applied Corporate Computing*: 1993, 1994. (Mexico)
- *International Symposium on Object-Oriented Methodologies and Systems*: 1994. (Italy)
- *International Conference on Parallel and Distributed Systems*: 1993. (Taiwan)
- *The International Workshop on Next Generation Information Technologies and Systems (NGITS)*: 1993. (Israel)
- *International Conference on Computing and Information*: 1992.
- *Symposium on Applied Computing (SAC)*: 1993.
- *CIPS (Canadian Information Processing Society) National Congress*: 1989.
- *CIPS Edmonton Conference*: 1986, 1988.

*Others:*

- Honorary Chair, *International Conference on Very Large Data Bases*: 2012.
- Ten-Year Best Paper Award Committee Chair, *International Conference on Very Large Data Bases*: 2010.
- Tutorials Committee, *ACM International Conference on Databases*: 2009.
- Tutorial Chair, *International Conference on Very Large Data Bases*: 1997.
- Tutorial Chair, *IEEE International Conference on Data Engineering*: 1998.
- Tutorial Chair, *International Symposium on Databases in Parallel and Distributed Systems*: 1988.

- Co-organizer, *Dagstuhl Workshop on Data Quality on the Web*, Dagstuhl, Germany, September 2003.
- Panel Organizer, *Web Information Systems Engineering*, 14th International Conference on Advanced Information Systems Engineering (CAiSE), 2002.
- Advanced Technology Seminars Chair, *IEEE International Conference On Data Engineering (ICDE)*, 2002.
- Panel Organizer, *Data Management Issues in Electronic Commerce*, ACM International Conference on Management of Data (SIGMOD), 1999.
- Co-organizer, *Dagstuhl Workshop on Database Support for Digital Libraries*, Dagstuhl, Germany, August 1999.
- Co-organizer, *NATO Advanced Systems Institute on Workflow Systems and Interoperability*, Istanbul, Turkey, 12-20 August, 1997.
- Steering Committee Member, *International Workshop on Temporal Databases: 1995*.
- Co-organizer, *NATO Advanced Systems Institute on Object-Oriented Database Systems*, Kusadasi, Turkey, 6-17 August, 1993.
- Organizing Committee Member, *International Workshop on an Infrastructure for Temporal Databases: 1993*.
- Demos Chair, *ACM SIGMOD/PODS Conference: 1997*.
- Organizing Chair, *18th International Conference on Very Large Data Bases: 1992*.
- Publicity Chair, *ACM SIGMOD/PODS Conference: 1996; VLDB Conference: 1998; International Conference on Distributed Information Systems: 1991; 8th ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing: 1989*.
- Advisory Committee Member of the Software Technology Track, *28th Hawaii International Conference on System Sciences: 1995*.
- Steering Committee Member, *4th International Conference on Computing and Information: 1993*.
- Coordinator, Issues in Distributed Databases Session, *Hawaii International Conference on System Sciences: 1986, 1987*.

◇ **Grant Review Activities**

- Reviewer for Natural Sciences and Research Council of Canada.
- Reviewer for National Science Foundation, USA.
- Reviewer for Austrian Science Foundation (FWF).
- Reviewer for Hong Kong Research Grants Council (RGC).
- Reviewer for Norwegian Research Program.
- Reviewer for Swiss National Science Foundation.
- Reviewer for Icelandic Research Fund.
- Reviewer for Portuguese Foundation for Science and Technology.

UNIVERSITY  
ADMINISTRATIVE  
POSITIONS

Unless otherwise noted, all responsibilities after 2000 are at the University of Waterloo; earlier ones are at the University of Alberta.

◇ **Major Responsibilities**

**January 2007 – June 2010:** Director, *David R. Cheriton School of Computer Science*

**1999 – 2000:** Acting Chair, *Department of Computing Science* (February-March 2000)

**1994 – 1995:** Acting Chair, *Department of Computing Science*



◇ **University and Faculty Level Responsibilities**

- 2009 – 2010:** Member, *Review Committee for Renewal of Waterloo Institute for Health Informatics Research*
- 2005 – 2006:** Member, *Nominating Committee for Director of School of Computer Science*
- 2003 – 2004:** Member, *Faculty of Mathematics Dean Selection Committee*;
- 2001 – 2002:** Member, *Nominating Committee for Chair of Department of Computer Science*
- 2000 – 2001:** Chair, *Ad hoc Committee on Department Governance* (The Committee, formed jointly by the Dean of Mathematics and the Chair of Computer Science, proposed a new model of governance for Computer Science that included recommendations for substantially changing the organization and operation of both Computer Science and the Faculty of Mathematics); Member, *Ad hoc Committee on Departmental Reorganization* (This is a precursor to the Committee on Governance; it was also struck jointly by the Dean of Mathematics and the Chair of Computer Science with the mandate of surveying the Department of Computer Science and determining the governance-related issues); Member, *Department of Computer Science Representative to Math Faculty Computing Facility Advisory Committee*
- 1996:** Faculty of Science representative on the *Committee on Space Planning*
- 1995:** Member, *General Appeals Committee* (This is a standing committee of the Academic Vice-President. office dealing with appeals by faculty members of their annual evaluations. I was an ad hoc member for one case)
- 1995 – 1997:** Member, *Faculty of Science Research Award Selection Committee*
- 1995 – 1996:** Member, *Faculty of Science Selection Committee for the Gordin Kaplan Award for Excellence in Research*
- 1994 – 1996:** Member and Chair (1995 – 96), *McCalla Professor Selection Committee*, Faculty of Science

◇ **School/Department Level Responsibilities**

- 2012 – 2013:** Member, *Cheriton School of Computer Science Advisory Committee on Appointment*; *Cheriton School of Computer Science Graduate Recruiting Committee*
- 2006 – 2007:** Member, *Cheriton School of Computer Science Tenure and Promotion Committee*
- 2005 – 2006:** Member, *School Tenure and Promotion Committee*; Chair, *Cheriton School of Computer Science Undergraduate Recruiting Committee*; Member,
- 2003 – 2004:** Member, *School of Computer Science Advisory Committee*; Member, *School of Computer Science Advisory Committee on Appointments*
- 2002 – 2003:** Member, *School of Computer Science Advisory Committee*
- 2001 – 2002:** Member, *Department of Computer Science Graduate Committee*; Member, *Department of Computer Science Infrastructure Committee*; Member, *Department of Computer Science Advisory Committee*
- 1998 – 1999:** Chair, *Computing Resources Policy Committee*; Member, *Recruiting Committee*; Member, *Executive Committee*; Member, *Technology Enhanced Instructional Spaces Advisory Committee* (A university committee that plans and budgets for the establishment of new and renewal of existing instructional computer laboratories); Member, Faculty of Science – Information Technology Committee
- 1993 – 1994:** Member of *Department of Computing Science Chair Selection Committee*
- 1991 – 1993:** Chair, *Research Planning and External Affairs Committee*
- 1988 – 1990:** Member, *Executive Committee*; Chair, *Graduate Committee*
- 1985 – 1988:** Member, *Executive Committee*; Member, *Graduate Committee*
- 1986 – 1988:** Member, *Computing Resources Policy Committee*

STUDENTS &  
RESEARCH  
PERSONNEL

◇ **Current PhD Students:**

- Ning Zhang (Started Fall 2008), Graph Databases and Graph Pattern Query.
- Günes Aluç (Started Fall 2009), Scalable, Adaptive, and Distributed RDF Data Management.
- Khaled Ammar (Started Fall 2011), Parallel Graph Data Management.
- Zeynep Korkmaz (Started Winter 2013), To be determined.

◇ **Current MMath Students:**

- Yuke Yang (September 2011 – present)

◇ **Post-Doctoral Fellows and Research Associates:**

- Olaf Hartig (November 2012 – October 2014)

◇ **Graduated PhD Students:**

1. *Patrick Kling*

**Thesis title:** Distributed XML Query Processing

**Graduation date:** Spring 2012

**Current affiliation:** Google, Waterloo, Canada

2. *Dr. Yingying Tao*

**Thesis title:** Mining Time-Changing Data Streams

**Graduation date:** Spring 2012

**Current affiliation:** CI Investments Inc., Toronto, Canada

3. *Dr. Qiang Wang*

**Thesis title:** Efficient Range and Join Query Processing in Massively Distributed Peer-to-Peer Networks

**Graduation date:** Fall 2008

**Current affiliation:** Microsoft Corp., Redmond, WA, USA

4. *Dr. Ning Zhang*

**Thesis title:** XQuery Evaluation and Optimization: A Native Approach

**Graduation date:** Fall 2006

**Current affiliation:** Facebook, CA, USA

5. *Dr. Lukasz Golab*

**Thesis title:** Processing Continuous Queries over On-line Data Streams

**Graduation date:** Fall 2006

**Current affiliation:** Assistant Professor of Management Science, University of Waterloo, Waterloo, Canada

Winner of Alumni Gold Medal

6. *Dr. Lei Chen*

**Thesis title:** Similarity Search Over Time Series and Trajectory Data

**Graduation date:** Spring 2005

**Current affiliation:** Associate Professor of Computer Science at Hong Kong University of Science and Technology, Hong Kong.

7. *Dr. Kaladhar Voruganti*

**Thesis title:** Studies on Client Caching DBMS Architectures and Algorithms

**Graduation date:** Spring 2001

**Current affiliation:** Technical Director, NetApp Advanced Development Group, Sunnyvale, CA, USA

Co-supervised with Ron Unrau

8. *Dr. Lingling Yan*

**Thesis title:** Building Scalable and Flexible Mediation: The AURORA Approach

**Graduation date:** Spring 2000

**Current affiliation:** IBM Santa Theresa Labs, CA, USA

9. *Dr. Yuri Leontiev*  
**Thesis title:** Type System for an Object-Oriented Database Programming Language  
**Graduation date:** Fall 1999  
**Current affiliation:** Intuit Canada, Edmonton, Canada  
Winner of 1999 Governor General Award and 2001 NSERC Doctoral Dissertation Award  
Co-supervised with Duane Szafron
10. *Dr. Iqbal Gorawalla*  
**Thesis title:** Temporal Aspects and Rule Systems in Object-Oriented Database Systems  
**Graduation date:** Spring 1998  
**Current affiliation:** Principal Consultant at Triton Consulting, UK.  
Co-supervised with Duane Szafron
11. *Dr. John Z. Li*  
**Thesis title:** Query Languages for Multimedia Database Systems and their Optimization  
**Graduation date:** Spring 1998  
**Current affiliation:** Accenture Ltd, Mississauga, Ontario, Canada  
Co-supervised with Duane Szafron
12. *Dr. Randal Peters*  
**Thesis title:** Formal Models, Views and Languages for Object-Oriented Database Systems  
**Graduation date:** Spring 1994  
**Current affiliation:** Meje Group Inc., Winnipeg, Canada
13. *Dr. Dave D. Straube*  
**Thesis title:** Queries and Query Processing in Object Oriented Database Systems  
**Graduation date:** Spring 1991  
**Current affiliation:** unknown.
14. *Dr. Kenneth Barker*  
**Thesis title:** Transaction Management in Multidatabase Systems  
**Graduation date:** Fall 1990  
**Current affiliation:** Professor and Dean of Science, University of Calgary, Calgary, Canada
15. *Dr. Abdel A. Farrag*  
**Thesis title:** Concurrency and Consistency in Database Systems  
**Graduation date:** Spring 1986  
**Current affiliation:** Professor of Computer Science, Dalhousie University, Halifax, Canada.

◇ **Graduated Master's Students:**

1. *Xin Zhan*  
**Essay title:** Survey on Energy Efficient Computing  
**Graduation date:** Spring 2010  
**Last known affiliation:** RBC Capital Markets, Toronto, Ontario
2. *Amod Gupta*  
**Thesis title:** Audio Processing on Constrained Devices  
**Graduation date:** Spring 2010  
**Last known affiliation:** Microsoft Corp., Redmond, WA, USA
3. *Jack Ng*  
**Essay title:** Extending Progressive Optimization to a Shared-Nothing Parallel Database Architecture  
**Graduation date:** Spring 2007  
**Last known affiliation:** IBM Toronto Laboratories, Toronto, Canada
4. *Emre Cem Özgen*  
**Thesis title:** View Selection in XML Query Processing  
**Graduation date:** Fall 2006  
**Last known affiliation:** Salesforce, CA, USA

5. *Sam Lightstone*  
**Thesis title:** Automated Design of Multi-Dimensional Clustering Tables for Relational Databases  
**Graduation date:** Spring 2004  
**Last known affiliation:** IBM Toronto Laboratories, Toronto, Canada
6. *Mohammad Hossain Sheikh Attar*  
**Thesis title:** Alternative Architectures and Protocols for Providing Strong Consistency in Dynamic Web Applications  
**Graduation date:** Spring 2004  
**Last known affiliation:** unknown
7. *Weimin Li*  
**Thesis title:** XComp: An XML Compression Tool  
**Graduation date:** Fall 2003  
**Last known affiliation:** Economic Insurance Group, Waterloo, Canada.
8. *Catalin Visinescu*  
**Thesis title:** Incremental Data Distribution on Internet-Based Distributed Systems: A Spring System Approach  
**Graduation date:** Fall 2003  
**Last known affiliation:** Research in Motion, Waterloo, Canada.
9. *Sunny K.S. Lam*  
**Thesis title:** WebQA: A Web Querying Using the QA Approach  
**Graduation date:** Spring 2002  
**Last known affiliation:** Oracle Canada, Toronto, Canada.
10. *Yuxin (Leon) Cao*  
**Thesis title:** The Evaluation of Strong Web Caching Consistency Algorithms  
**Graduation date:** Spring 2002  
**Last known affiliation:** unknown
11. *Shu Lin*  
**Thesis title:** An Extendible Hashing Structure for Image Similarity Searches  
**Graduation date:** Fall 2000  
**Last known affiliation:** IBM Canada Laboratories, Toronto, Canada
12. *Justin Amalraj*  
**Thesis title:** Performance Evaluation of Optimistic Cache Consistency Algorithms for Web-based Electronic Commerce Applications  
**Graduation date:** Fall 2000  
**Last known affiliation:** unknown
13. *Benjamin Bin Yao*  
**Thesis title:** Building an Interoperable Distributed Image Database Management System on top of a CORBA Platform  
**Graduation date:** Fall 2000  
**Last known affiliation:** SAP Laboratories, Montreal, Canada
14. *Bing Xu*  
**Thesis title:** Design and Development of a Visual Query Interface for DISIMA Image DBMS  
**Graduation date:** Spring 2000  
**Last known affiliation:** IBM Canada, Toronto, Canada
15. *Irene Lin-Oi Cheng*  
**Thesis title:** Image Databases: A Content-Based Type System and Query by Similarity Match  
**Graduation date:** Spring 1999  
**Last known affiliation:** Director, Multimedia Research Centre, University of Alberta

16. *Adriana Zubiri (Manas)*  
**Thesis title:** Design and Implementation of an Object Database for Injury Surveillance  
**Graduation date:** Fall 1997  
**Last known affiliation:** IBM Toronto Laboratories, Toronto, Canada.
17. *Sherine El-Medani*  
**Thesis title:** Coupling an SGML Compiler With a Multimedia Database Management System  
**Graduation date:** Fall 1996  
**Last known affiliation:** Siemens, Ottawa, Canada  
Co-supervised with Duane Szafron
18. *Manuela Junghaans (Schone)*  
**Thesis title:** A Generic Type System for Object-Oriented Multimedia Databases  
**Graduation date:** Fall 1996  
**Last known affiliation:** Siemens AG, Berlin, Germany  
Co-supervised with Duane Szafron
19. *Ghada El-Medani*  
**Thesis title:** A Visual Query Facility for Multimedia Databases  
**Graduation date:** Fall 1995  
**Last known affiliation:** Nortel, Ottawa, Canada  
Co-supervised with Duane Szafron
20. *Chiradeep Vittal*  
**Thesis title:** Design and Implementation of an Object-Oriented Multimedia Database System for News-on-Demand  
**Graduation date:** Fall 1995  
**Last known affiliation:** ONI Systems, San Jose, CA, USA  
Co-supervised with Duane Szafron
21. *Adriana Munoz*  
**Thesis title:** An Extensible Query Optimizer Architecture for the TIGUKAT Objectbase Management System  
**Graduation date:** Spring 1994  
**Last known affiliation:** PhD Student, University of Ottawa, Canada
22. *Kaladhar Voruganti*  
**Thesis title:** Benchmarking for new database application domains  
**Graduation date:** Spring 1993  
**Last known affiliation:** See above under Former PhD students  
Essay-based master's
23. *Yun Wang*  
**Thesis title:** Advanced Transaction Models and Management Strategies for Object-Oriented Database Systems  
**Graduation date:** Spring 1993  
**Last known affiliation:** Destiny Software, Wishohocken, Pennsylvania, USA  
Essay-based master's
24. *Ana Dominguez*  
**Thesis title:** A Query Optimization Strategy for Multidatabase Systems  
**Graduation date:** Fall 1993  
**Last known affiliation:** PrePrint Inc., Edmonton, Canada.
25. *Boman B. Irani*  
**Thesis title:** Implementation of TIGUKAT Object Model  
**Graduation date:** Fall 1993  
**Last known affiliation:** Sun Microsystems, Palo Alto, CA, USA
26. *Anna P. Lipka*  
**Thesis title:** The Design and Implementation of TIGUKAT User Languages

**Graduation date:** Fall 1993

**Last known affiliation:** Alias-Wavefront, Toronto, Ontario, Canada.

27. *Youping Niu*

**Thesis title:** Network Communication Overhead in Distributed Concurrency Control Performance

**Graduation date:** Fall 1990

**Last known affiliation:** unknown

28. *Yan Li*

**Thesis title:** Communication in FLEX

**Graduation date:** Spring 1990

**Last known affiliation:** unknown

29. *Meei Fen Teo*

**Thesis title:** Experiments on the Implementation of Database Buffer Management Strategies in Virtual Memory Environments

**Graduation date:** Spring 1989

**Last known affiliation:** unknown

30. *Kok-Lung Wong*

**Thesis title:** Distributed Simulation of Performance Petri Nets

**Graduation date:** Fall 1988

**Last known affiliation:** unknown

31. *David Meechan*

**Thesis title:** A Heuristic Approach to Query Processing

**Graduation date:** Spring 1988

**Last known affiliation:** Zim Technologies International, Barbados

32. *Christina Lau*

**Thesis title:** Object Management, Protection and Scheduling in FLEX

**Graduation date:** Spring 1988

**Last known affiliation:** IBM Laboratories, Toronto, Canada

33. *Tse-Men Koon*

**Thesis title:** Performance of Resilient Synchronization Mechanisms for Distributed Databases

**Graduation date:** Spring 1986

**Last known affiliation:** unknown

◇ **Former Post-Doctoral Fellows and Research Associates:**

- Dr. Reza Akbarania, December 2007-December 2008. Currently researcher at Atlas group, INRIA, LINA - Université de Nantes, Nantes, France.
- Dr. Susanne Busse, July – September 2007, Technische Universität Berlin. Currently Professor at Fachhochschule Brandenburg, Fachbereich Informatik und Medien.
- Dr. Vincent Oria, University of Alberta, May 1996 – December 1999. Currently Associate Professor of Computer Science at New Jersey Institute of Technology, Newark, NJ, USA.
- Paul Iglinski, University of Alberta, Department of Computing Science. January 1995 – July 2000. Retired from University of Alberta

◇ **Former Visiting Students:**

- Tao Chen, PhD student at National University of Defense Technology, China, October 2009–March 2011.
- Lei Zou, PhD student at Huazhong University of Science and Technology, China, September 2008-October 2009 (graduation date: 2009). Currently Assistant Professor, Institute of Computer Science & Technology, Peking University, China.
- Raymond Wong, PhD student at Chinese University of Hong Kong, June-July 2008 (graduation date: 2008). Currently Assistant Professor, Department of Computer Science, Hong Kong University of Science and Technology, Hong Kong.

- Nan Tang, PhD student at Chinese University of Hong Kong, March - August 2007 (graduation date: 2008). Currently Research Fellow, Laboratory for Foundations of Computer Science, University of Edinburgh, UK.
  - Yueguo Chen, PhD student at National University of Singapore, April - June 2007 (graduation date: 2009). Currently Assistant Professor, Department of Computer Science, Renmin University, China.
  - Xiaoyan Yang, PhD student at National University of Singapore, April - June 2007.
  - Sebastian Schär, Master's student at Dresden University of Technology, Germany, 2004.
  - Abdullah Diltemiz, Master's student at RWTH Aachen, Germany, 2003-2004.
  - Sule Gündüz-Öğüdücü, PhD student at Istanbul Technical University, Turkey, 2001-2002 (graduation date: 2003). Currently Associate Professor, Department of Computer Engineering, Istanbul Technical University, Turkey.
  - Henrike Berthold, PhD student at Dresden University of Technology, Germany, 2000 (graduation date: 2002)
  - Sylvia Hollfellder, PhD student at Technical University of Darmstadt, Germany, 1999 (graduation date: 2004)
  - Katherine Gayer, Master's student at Technical University of Darmstadt, Germany, 1996.
- ◇ **Undergraduate Interns:**
- Amod Gupta, Indian Institute of Information Technology, Allahabad, India, 2006.
  - Kumar Gaurav Bijay, Indian Institute of Technology, Bombay, India, 2005.
  - Abhay Kumar Jha, Indian Institute of Technology, Bombay, India, 2005.
  - Piyush Prahladka, Indian Institute of Technology, Bombay, India, 2004.
  - Shishir K. Agrawal, Indian Institute of Technology, Bombay, India, 2004.
  - Varun Kochalia, Indian Institute of Technology, Bombay, India, 2003.
  - Shaveen Garg, Indian Institute of Technology, Bombay, India, 2003.
  - Shariq Rizvi, Indian Institute of Technology, Bombay, India, 2002.
  - Nitin Khendelwal, Indian Institute of Technology, Bombay, India, 2002.
  - Andreas Doms, Dresden University of Technology, Germany, 2001-2002.
  - Mirko Seifert, Dresden University of Technology, Germany, 2001-2002.
  - Bilal Shirazi, University of Waterloo, 2002.
  - Aameek Singh, Indian Institute of Technology, Bombay, India, 2001.
- ◇ **External Examiner:**
- Erietta Liarou, PhD, Universiteit van Amsterdam, The Netherlands, 2013 (PhD)
  - Alexandru Maga, ETH Zürich, December 2011 (PhD).
  - Sadegh Nobari, National University of Singapore, 2012 (PhD)
  - Michael Duller, ETH Zürich, December 2011 (PhD).
  - Huayu Wu, National University of Singapore, 2011 (PhD).
  - Irina Magdalena Botan, ETH Zürich, 2011 (PhD).
  - Liang Xu, National University of Singapore, 2010 (PhD).
  - Ladjel Bellatreche, Université de Poitiers, France, 2009, (Rapporteur for Habilitation à Diriger les Recherches)
  - Haifeng Liu, University of Toronto, 2009 (PhD)
  - Nan Tang, Chinese University of Hong Kong, 2008 (PhD)

- Eric Lo, ETH Zürich, 2007 (PhD)
- Christian Plattner, ETH Zürich, 2006 (PhD)
- Changqing Li, National University of Singapore, 2006 (PhD)
- Attila Barta, University of Toronto, 2006 (PhD)
- Thomas Heimrich, Technical University of Ilmenau, 2005 (PhD)
- Timour Katchaounov, University of Uppsala, Sweden, 2003 (PhD)
- Henrique Paques, Georgia Institute of Technology, USA, 2003 (PhD)
- Andrea Cali, Università di Roma La Sapienza, Italy, 2002 (PhD)
- Henrike Berthold, Dresden University of Technology, Germany, 2002 (PhD)
- Ioana Manolescu, Université de Versailles, France, 2001 (Ph.D; Rapporteur)
- Eleana Kafeza, Hong Kong University of Science and Technology, Hong Kong, 2000 (PhD)
- Alban Gabillon, Université de Toulon, France, 2000 (Rapporteur for Habilitation à Diriger les Rescherches)
- Mikael Ronström, University of Linköping, Sweden, 1998 (PhD)
- Jacek Skowronek, University of Twente, The Netherlands, 1997 (PhD)
- Panagiotis Patsouris, University of Witwatersrand, South Africa, 1997 (PhD)
- Gopi Attaluri, University of Waterloo, Canada, 1996 (PhD)
- Li Yu, University of Western Ontario, Canada, 1992 (PhD)
- Vinay Deshpande, University of Waterloo, Canada, 1991 (PhD)
- Bjorn Bergsten, Université Paris 6, France, 1991 (PhD)

RESEARCH &  
OTHER  
FUNDING

Total of about \$14M. Unless otherwise noted, all of the following funding is in Canadian Dollars. NSERC grants are net without overhead. In most of these, I am the PI; the few where I am not the PI are marked by †.

- ◇ Cluster Computing Infrastructure for Scalable Big Data Management and Analysis. Canada Foundation for Innovation and Ontario Research Fund, 2013, \$538,536 (joint with Ian Munro and Khuzaima Daudjee).
- ◇ Techniques and Systems for Parallel Graph Analysis. IBM Centre for Advanced Studies, 2013-2014, \$28,000/year.
- ◇ Focusing on the Data in Web-Scale Data Integration. Business Intelligence NSERC Strategic Network, 2012-2013, \$25,000 (joint with Ashraf Abounaga).
- ◇ Modeling and Querying Uncertainty in Record De-duplication and Repairing FD Violations. Business Intelligence NSERC Strategic Network, 2012-2013, \$25,000 (joint with Ihab Ilyas).
- ◇ Modeling and Querying Uncertainty in Record De-duplication. Business Intelligence NSERC Strategic Network, 2011-2012, \$52,000 (joint with Ihab Ilyas).
- ◇ Multi-Platform Digital Media Enabling Technologies. Ontario Research Fund, 2010-2015, \$4,899,045.
- ◇ Beyond Mashups: Data Integration for End-Users. Google Research Award, 2009, US\$70,000.
- ◇ Studies in Advanced Distributed Data Management. NSERC Discovery Grant, 2009-2014, \$70,000/year.
- ◇ Distributed XML Processing. Business Intelligence NSERC Strategic Network, 2009-2011, \$37,500 (joint with Denilson Barbosa, University of Alberta).
- ◇ Keyword-enabling Data Warehouses†. Business Intelligence NSERC Strategic Network, 2009-2011, \$44,000/year (joint with Ihab Ilyas, University of Waterloo and Laks Lakshmanan, UBC).



- ◇ Change Detecting and Mining of Dynamic Data Streams. IBM Centre for Advanced Studies, 2009-2011, \$28,000/year.
- ◇ Data Stream Management in Sensor Networks. Communications and Information Technology Ontario (CITO) Grant, 2005-2007, \$125,821.
- ◇ Data Stream Systems. Sun Microsystems Grant, 2004-2005, \$40,000.
- ◇ Internet-based Data Management Issues. NSERC Discovery Grant, 2004-2008, \$65,700/year.
- ◇ Database Technology in IP Telephony†. Communications and Information Technology Ontario, 2003-2005, \$118,500/year (including \$30,000 from Nortel; joint with Grant Weddell and David Toman).
- ◇ The Software Telecommunications Group (STG). 2002-2007, Ontario Research and Development Challenge Fund (ORDCF): \$4,730,000 (including \$2,480,000 from Nortel and \$300,000 from Sun Microsystems); Co-PIs: Ric Holt, M. Tamer Özsu, Johnny Wong.
- ◇ Issues in Developing Next Generation Distributed Database Systems. NSERC Individual Research Grant, 1999-2004, \$38,000/year.
- ◇ Managing Large, Diverse Data Sources†. Bell University Laboratories Grant, 2000-2002, \$225,000/year (with 8 others; Frank Tompa as PI).
- ◇ Equipment for Database Systems Research†. NSERC Equipment Grant, 2001, \$56,970 (with 7 others; Ken Salem as PI).
- ◇ *Enabling Technologies for Electronic Commerce Major Project*: Funding for two projects: Development of Multimedia Virtual Catalogs and Interoperability Issues in Electronic Commerce. 1998-1999: \$76,500, 1999-2002: \$61,000/year; Project Integration and Management. 1998-2001: \$61,000/year. This major project was part of the Canadian Institute for Telecommunications Research (CITR), one of the Canadian Networks of Centres of Excellence.
- ◇ Distributed Image Databases. Institute for Robotics and Intelligent Systems (IRIS), one of the Canadian Networks of Centres of Excellence, 1998 – 1999: \$30,000/year; 1999 – 2005: \$20,000/year.
- ◇ CAVE Virtual Reality†. Natural Sciences and Engineering Research Council of Canada (NSERC) Major Installation Grant, 1998, \$433,000 (PI: Mark Green).
- ◇ Design and Implementation of an Enactment Service for a Workflow System (PI: Mark Green). NATO Collaborative Research Grant, 1997 – 1998, Belgian Francs 204,000 (with Asuman Dogac of Middle East Technical University as PI).
- ◇ A Distributed Image Database Management System. Natural Sciences and Engineering Research Council of Canada (NSERC) Strategic Grant, 1995 – 1999, \$327,620.
- ◇ Electronic Commerce. Part of the Broadband Services Major Project of Canadian Institute for Telecommunications Research (CITR), one of the Canadian Networks of Centres of Excellence, 1996 – 1998, \$100,000/year.
- ◇ Design and Implementation of Distributed Objectbase Management Systems. Natural Sciences and Engineering Research Council of Canada (NSERC) Research Grant, 1995 – 1999, \$30,900/year.
- ◇ Multimedia Data Management. as part of the Broadband Services Major Project of Canadian Institute for Telecommunications Research (CITR), one of the Canadian Networks of Centres of Excellence, 1993 – 1998, \$437,875.
- ◇ Upgrade to the Laboratory for Database Systems Research. Natural Sciences and Engineering Research Council of Canada (NSERC) Equipment Grant, 1993 – 1994, \$38,500.
- ◇ Artificial Intelligence – Database Systems Group Infrastructure Grant†. Natural Sciences and Engineering Research Council of Canada (NSERC), 1994 – 1997, \$33,000/year (with 8 others).
- ◇ Design and Implementation of Distributed Object-Oriented Database Systems. Natural Sciences and Engineering Research Council of Canada (NSERC) Operating Grant, 1991 – 1994, \$28,000/year.

- ◇ Visit of Researcher Patrick Valduriez. 1991 – 1992, Operating Grant, University of Alberta Central Research Fund, \$5,000.
- ◇ Laboratory for Database Systems Research. Natural Sciences and Engineering Research Council of Canada (NSERC) Equipment Grant, 1990 – 1991, \$43,397 (with three other applicants).
- ◇ Artificial Intelligence – Database Systems Group Infrastructure Grant†. Natural Sciences and Engineering Research Council of Canada (NSERC), 1991 – 1993, \$45,000/year (with 25 other applicants).
- ◇ CPU Server†. Natural Sciences and Engineering Research Council of Canada (NSERC) Major Equipment Grant, 1990, \$194,530 (with 25 other applicants).
- ◇ Design and Implementation of DIDOS: A Distributed Database Operating System. Natural Sciences and Engineering Research Council of Canada (NSERC) Operating Grant, 1988 – 1991, \$19,477/year.
- ◇ Visit to Institute for System Studies, Moscow, U.S.S.R., June 18 – July 2, 1988, Travel Grant, University of Alberta Central Research Fund, \$1,700.
- ◇ Interfacing Distributed Databases with Operating Systems. Natural Sciences and Engineering Research Council of Canada (NSERC) Operating Grant, 1987 – 1988, \$14,000.
- ◇ Analysis and Design of Distributed Database Systems/Operating System Support for Distributed Databases. Natural Sciences and Engineering Research Council of Canada (NSERC) Operating Grant, 1986 – 1987, \$13,797.
- ◇ Attendance at the 19th Hawaii International Conference on System Sciences. January 1986, Travel Grant, University of Alberta Central Research Fund, \$1,000.
- ◇ Analysis and Design of Distributed Database Systems. Natural Sciences and Engineering Research Council of Canada (NSERC) Operating Grant, 1985 – 1986, \$13,140.
- ◇ Distributed Computing Group Infrastructure Grant†, Natural Sciences and Engineering Research Council of Canada (NSERC), 1985 – 1986, \$69,000 (with 13 other applicants).
- ◇ A Net Simulator for Distributed Database Systems. University of Alberta Central Research Fund, 1984 – 1985, \$8,000.

CONSULTING  
& EXTERNAL  
SEMINARS

◇ **Industrial Consulting:**

BlueCat Networks, Toronto, Canada (2011)

Consulted on patent infringement issues.

Pre Print Inc., Edmonton, Canada (1996)

PrePrint develops software for the creation of yellow page directories. The assignment included providing assistance for distribution design of the database that is used for this application.

Bull Information Systems, Phoenix, USA (1993)

Consultancy in distributed database management. A major portion of the consulting involved a three-day intensive (18 hours) course on this topic for 80 engineers.

◇ **Seminars and Tutorials at Conferences:**

Distributed Data and Object Management. *International Conference on Extended Database Technology*, March 1996, Avignon, France (half-day).

Distributed Data and Object Management. *Fourth International Conference on Information and Knowledge Management*, November 29 – December 2 1995, Baltimore, MD, USA (half-day).

Transactions and Transaction Management in Object-Oriented Database Systems. *NATO Advanced Study Institute on Object-Oriented Database Systems*, August 6 – 15, 1993, Kusadasi, Turkey (half-day).

Distributed Data Management – Unsolved Problems and New Issues. *9th International Conference on Data Engineering*, April 19 – 23, 1993, Vienna, Austria (half-day).

Distributed Object Management. *1st International Conference on Information and Knowledge Management*, November 5 – 7, 1992, Baltimore, MD, USA (half-day).

Distributed Data Management – Unsolved Problems and New Issues. *8th International Conference on Data Engineering*, February 3 – 7, 1992, Tempe, AZ, USA (full-day).

Distributed Databases within the Enterprise. *CIPS (Canadian Information Processing Society) Edmonton .1 Conference*, October 21 – 24, 1991, Edmonton, Canada (half-day).

Distributed Data Management – Unsolved Problems and New Issues. *17th International Conference on Very Large Data Bases*, September 3 – 6, 1991, Barcelona, Spain (half-day).

Operating System Support for Distributed Database Systems: Architectures and Issues in Integration. *The 2nd IEEE Symposium on Parallel and Distributed Processing*, December 9 – 13, 1990, Dallas, TX, USA (full day).

Distributed Database Management Systems. *6th International Conference on Data Engineering*, February 5 – 9, 1990, Los Angeles, CA, USA (half day).

Reliable Distributed Software. *COMPCON Spring Conference*, February 28 – March 3, 1989, San Francisco, CA, USA (full day; with A. Elmagarmid).

Reliable Distributed Systems. *7th International Symposium on Reliable Distributed Systems*, October 10 – 12, 1988, Columbus, OH, USA (full day; with A. Elmagarmid).

Fault-Tolerant Distributed Software. *COMPCON Spring Conference*, March 1 – 4, 1988, San Francisco, CA, USA (full day; with A. Elmagarmid).

Distributed Database Operating Systems. *4th International Conference on Data Engineering*, February 1 – 5, 1988, Los Angeles, CA, USA (half-day).

◇ **Short Courses:**

Distributed Data and Object Management. Institute for Computer Research, University of Waterloo, Waterloo, Canada, 24 – 25 June 1999 (2 days, 12 hours).

Distributed Data and Object Management. University of Udine, Udine, Italy, 27 – 30 April 1998 (12 hours).

Principles of Distributed Databases. Technical University of Darmstadt, Darmstadt, Germany, 13 – 24 April 1998 (9 hours).

Special Issues in Advanced Data Management. University of Jyväskylä, Jyväskylä, Finland, 6 – 9 April 1998 (16 hours).

Distributed Object Management and Interoperability. Summer course at Ecole d.te CEA-EDF-INRIA, Chateau du Breau-sans-Nappe, France, 8 – 12 July 1996.

Distributed Data Management – Unsolved Problems and New Issues. Bull Worldwide Information Systems, Inc., March 29 – 31, 1993, Phoenix, Arizona.

Distributed Data Management – Unsolved Problems and New Issues. Bull Worldwide Information Systems, Inc., February 7, 1992, Phoenix, Arizona.

Distributed Data Management – Unsolved Problems and New Issues. Short course at Middle East Technical University, July 31, 1991, Ankara, Turkey (half-day).

Data Modeling. Seminar for the Alberta Cancer Board, September 11 – 13, 1989, Edmonton, Canada.

Advanced Course on Distributed Computing. Summer course at Instituto Tecnológico y de Estudios Superiores, Monterrey, Mexico, June 2 – 20, 1986.

◇ **Seminars for the Government of Alberta:**

Designed and presented eleven training courses for the Government of Alberta on the following topics: Local Area Network Concepts, Logical Data Modeling for DP Personnel, Micro-Mainframe Connectivity, and Distributed Data Processing.

◇ **UNIDO Seminars:**

Designed and conducted ten seminars under Special Service Agreement with UNIDO (United Nations Industrial Development Organization) on the following topics: Database Management Systems, Engineering Database Organization, Project Planning and Control Techniques, and Use of Computers in Production.

RECENT  
COLLOQUIA &  
TALKS

◇ **Keynotes, and Distinguished Lectures:**

*RDF Data Management*, University of Pennsylvania, Department of Computer Science, 3 December 2012.

*Internet Scale Data Distribution: Some Research Problems*, University at Buffalo, The State University of New York, Department of Computer Science and Engineering, 28 April 2011.

*Internet Scale Data Distribution: Some Research Problems*, William Mong Distinguished Lecture, University of Hong Kong, Hong Kong, 13 December 2010.

*Distributed XML Processing*, Seventh International XML Database Symposium (XSym 2010), Singapore, 17 September 2010.

*Distributed XML Processing*, APWeb/WAIM 2009 – The Joint International Conferences on Asia-Pacific Web Conference (APWeb) and Web-Age Information Management (WAIM), Suzhou, China, 2-4 April 2009.

*Internet-Scale Data Distribution: Some Research Problems*, 12th East-European Conference on Advances in Databases and Information Systems (ADBIS), Pori, Finland, 5-9 September 2008.

*Internet-Scale Data Distribution: Some Research Problems*, International Conference on Distributed Computing Systems (ICDCS), Toronto, Canada, 25-29 June 2007.

*Achievements and Remaining Challenges in Multimedia Data Modeling*, 2nd IEEE International Workshop on Multimedia Databases and Data Management, Istanbul, Turkey, 15 April 2007.

*Internet-Scale Data Distribution: Some Research Problems*, 7th International Conference on Web Information Systems Engineering (WISE), Wuhan, China, 23-26 October 2006.

*Query Processing and Optimization in Native XML Databases*, Fourth International XML Database Symposium (XSym 2006), Seoul, Korea, 10-11 September 2006.

*Sliding Window Query Processing over Data Streams*, ETH Zürich, Department of Computer Science, Switzerland, 29 May 2006.

*Query Processing and Optimization in Native XML Databases*, University of Zürich, Department of Informatics, Switzerland, 20 April 2006.

*Query Processing in Data Stream Systems*, Joint Session of 11th International Workshop on Foundations of Models and Languages for Data and Objects - Query Languages and Query Processing, International Conference on Semantics of Networked World, and 2nd International Workshop on Pervasive Information Management, Munich, Germany, 30 March 2006.

*Achievements and Remaining Challenges in Multimedia Data Modeling*, 12th International Multimedia Modeling Conference, Beijing, China, 3-6 January 2006.

*Similarity-based Search of Time Series and Trajectory Data*, New England Database Society, Boston, USA, 20 May 2005.

*Database Issues in Streaming Data*, Queen's University, Kingston, Canada, 6 May 2004.

*Database Issues in Stream Data Management*, Middle East Technical University, Ankara, Turkey, 19 October 2003.

*Querying Image Databases – DISIMA Approach*, Case Western Reserve University, Cleveland, Ohio, 7 February 2002.

*Distributed Data Management Issues in a Changing Environment*, University of Tokyo; SIGMOD Japan Meeting, Tokyo, Japan, 2 December 2001.

*Distributed Data Management Issues in a Changing Environment*, International Workshop on Foundations of Models for Information Integration (FMII-2001), Viterbo, Italy, 16-18 September 2001.

*Flexible Data Integration on the Internet: Current Trends and Issues*, International Workshop on Information Integration on the Web: Technologies and Applications, Rio de Janeiro, Brazil, 9-11 April 2001.

*Document Management Issues in E-Commerce*, 11th International Workshop on Research Issues on Data Engineering (RIDE 2001), Heidelberg, Germany, 1-2 April 2001.

*Database Support for Document and Multimedia Data*, German Database Conference (BTW), Oldenburg, Germany, 7-9 March 2001.

*Issues in Multimedia Data Management*, International Database Engineering and Applications Symposium (IDEAS), Montreal, Canada, August 2-4, 1999.

*Issues in Multimedia Data Management*, 13e Journées de Bases de Données Avancées (BDA), Grenoble, France, September 9 – 12, 1997.

◇ **Other Invited Talks (since 2000):**

2013:

- *gStore: A Graph-based SPARQL Query Engine*, University of Tokyo, 12 March 2013.

2012:

- *RDF Data Management*, University of Manitoba, 29 June 2012.
- *RDF Data Management*, University of Zürich, 1 March 2012.
- *RDF Data Management*, Università degli Studi dell’Insubria, 8 February 2012.
- *RDF Data Management*, Politecnico di Milano, 7 February 2012.
- *Internet-Scale Data Distribution: Some Research Problems*, University of Basel, 19 January 2012.
- *RDF Data Management*, Technische Universität München, 11 January 2012.
- *RDF Data Management*, Ludwig-Maximilians-Universität München, 10 January 2012.

2011:

- “Some Results in Graph Data Management,” Humboldt University, Department of Computer Science, 12 December 2011.
- “Some Results in Graph Data Management,” Technical University of Dresden, Department of Computer Science, 8 December 2011.
- *Some Results in Graph Data Management*, EPFL, Lausanne, Switzerland, 18 November 2011.
- *Some Results in Graph Data Management*, ETH Zürich, Department of Computer Science, Switzerland, 31 October 2011.

2010:

- *Distributed XML Processing*, Hong Kong University of Science and Technology, Hong Kong, 15 December 2010.
- *Distributed XML Processing*, Nanyang Technological University, Singapore, 10 December 2010.

2006:

- *Sliding Window Query Processing over Data Streams*, Hong Kong University of Science and Technology, Department of Computer Science, China, 26 October 2006.
- *Sliding Window Query Processing over Data Streams*, National University of Singapore, School of Computing, Singapore, 20 October 2006.
- *Query Processing and Optimization in Native XML Databases*, National University of Singapore, School of Computing, Singapore, 6 October 2006.
- *Sliding Window Query Processing over Data Streams*, Université Paris Dauphine, Laboratoire d’Analyse et Modélisation de Systèmes pour l’Aide à la décision, 5 June 2006.

- *Sliding Window Query Processing over Data Streams*, Université de Nantes, Laboratoire d'Informatique de Nantes Atlantique, 1 June 2006.
- *Query Processing and Optimization in Native XML Databases*, Tsinghua University, Department of Computer Science, 10 January 2006.
- *Query Processing and Optimization in Native XML Databases*, Microsoft Research Asia, Beijing, China, 9 January 2006.

2005:

- *Update-Pattern-Aware Modeling and Processing of Continuous Queries*, National University of Singapore, School of Computing, 26 April 2005.
- *Similarity-based Search of Time Series and Trajectory Data*, University of Uppsala, Uppsala, Sweden, 2 February 2005.

2004:

- *Windowed Join Processing over Data Streams*, University of Vienna, Vienna, Austria, 23 April 2004.
- *A Succinct Physical Storage Scheme for Efficient Evaluation of XPath Queries in XML*, Arizona State University, Tempe, AZ, USA, 20 February 2004.

2003:

- *Database Issues in Stream Data Management*, University of Uppsala, Uppsala, Sweden, 11 October 2003.
- *Database Issues in Stream Data Management*, University of British Columbia, Vancouver, Canada, 24 July 2003.

2002:

- *XBench: A Family of XML Benchmarks*, CASCON Conference Workshop on XML Data Management, Toronto, Canada, 1 October 2002.
- *XBench: A Family of XML Benchmarks*, Workshop on Efficiency and Effectiveness of XML Tools and Techniques, Hong Kong, 19 August 2002.
- *Querying Image Databases – DISIMA Approach*, Ohio State University, Columbus, OH, USA, 22 April 2002.
- *Querying the Web – Question Answer Approach*, University of Maryland Baltimore County, Baltimore, MD, USA, 15 March 2002.
- *Querying the Web – Question Answer Approach*, Northwestern University, Evanston, IL, USA, 5 March 2002.
- *Querying the Web – Question Answer Approach*, Georgia Institute of Technology, Atlanta, GA, USA, 22 February 2002.
- *DISIMA Distributed Image Database System – Experiences and Reflections*, Technical University of Dresden, Dresden, Germany, 24 January 2002.

2000:

- *Evaluation of Client-Server Object DBMSs*, IBM CASCON Conference, Toronto, Canada, November 15, 2000.
- *Adaptive Distributed DBMS Architectures*, GMD-IPSI, Darmstadt, Germany, September 15, 2000.
- *An Interoperable Multimedia Catalog System for Electronic Commerce*, Third International Workshop on Technological Challenges of Electronic Commerce, Waterloo, Canada, 28-29 June 2000.

- A1. M. Tamer Özsu and Patrick Valduriez. *Principles of Distributed Database Systems*. Springer, 3rd edition, 2011. Previous two editions of the book were published by Prentice-Hall in 1991 and 1999, respectively.

The book has been translated into:

- Portugese (second edition)
- Chinese (third edition), to be published by Tsinghua University Press.

- A2. Lukasz Golab and M. Tamer Özsu. *Data Stream Systems*. Morgan & Claypool, 2010.

- A3. M. Tamer Özsu. *Project Planning and Control Techniques*. Turkish Information Processing Society Press, 1986. (in Turkish).

◇ **Edited Books/Proceedings:**

- B1. Ling Liu and M. Tamer Özsu, editors. *Encyclopedia of Database Systems*. Springer, 2009.

- B2. Mario A. Nascimento, M. Tamer Özsu, Donald Kossmann, Renee J. Miller, Jose A. Blakeley, and K. Berni Schiefer, editors. *Proc. Thirtieth International Conference on Very Large Data Bases*. VLDB Endowment, 2004.

- B3. Anne B. Pidduck, John Mylopoulos, Carson C. Woo, and M. Tamer Özsu, editors. *Advanced Information Systems Engineering – Proc. 14th International Conference (CAiSE 2002)*, Lecture Notes in Computer Science 2348. Springer, 2002.

- B4. Mario Nascimento, M. Tamer Özsu, and Osmar Zaiane, editors. *Proc. International Database Engineering & Applications Symposium*. IEEE Computer Society Press, 2002.

- B5. M. Tamer Özsu, Hans-Jörg Schek, Katsumi Tanaka, Yanchun Zhang, and Yahiko Kambayashi, editors. *Proc. 2nd International Conference on Web Information Systems Engineering*. IEEE Computer Society Press, 2001.

- B6. Asuman Dogac, M. Tamer Özsu, and Ozgur Ulusoy, editors. *Current Trends in Data Management Technology*. Idea Group Publishers, 1999.

- B7. Sushil Jajodia, M. Tamer Özsu, and Asuman Dogac, editors. *Advances in Multimedia Information Systems - Proceedings of the 4th International Workshop on Multimedia Information Systems*, Lecture Notes in Computer Science 1508. Springer, 1998.

- B8. Asuman Dogac, L. Kalinichenko, M. Tamer Özsu, and Amit P. Sheth, editors. *Advances in Workflow Systems and Interoperability*. Springer, 1998.

- B9. Asuman Dogac, M. Tamer Özsu, A. Biliris, and T. Sellis, editors. *Advances in Object-Oriented Database Systems*. Springer, 1994.

- B10. M. Tamer Özsu, Umeshwar Dayal, and Patrick Valduriez, editors. *Distributed Object Management*. Morgan Kaufmann, 1994.

- B11. O. Bukhres, M. Tamer Özsu, and M.C. Shan, editors. *Proc. RIDE'95 Workshop on Distributed Object Management*. IEEE Press, 1985.

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F4. M. Tamer Özsu. Document management issues in e-commerce. In *Proc. 11th Int. Workshop on Research Issues on Data Eng.*, 2001 (Abstract of keynote address.)

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