M. Tamer Özsu

University Professor
University of Waterloo
David R. Cheriton School of Computer Science
200 University Avenue West
Waterloo, ON N2L 3G1
Canada

tamer.ozsu@uwaterloo.ca
http://cs.uwaterloo.ca/~tozsu
Tel: +1 (519) 888-4043
ORCID Id: 0000-0002-8126-1717

PERSONAL

- **Citizenship:** Canadian & Turkish
- **Marital status:** Married, one son, one grandson

BIOSKETCH

M. Tamer Özsu is a University Professor in David R. Cheriton School of Computer Science at the University of Waterloo and Co-Director of Faculty of Mathematics Data Science and Artificial Intelligence Program. He also holds a Distinguished Visiting Professor position at Tsinghua University, China. He is the Founding Director of Waterloo-Huawei Joint Innovation Laboratory since 2018. He was the Director of the Cheriton School of Computer Science from January 2007 to June 2010, and the Associate Dean of Research of the Faculty of Mathematics from January 2014 to June 2016. He holds a Ph.D. (1983) and an MS (1981) in Computer and Information Science from The Ohio State University, USA (1983) and a B.S. (1974) and M.S. (1978) in Industrial Engineering from the Middle East Technical University, Türkiye (1974). Prior to joining University of Waterloo in 2000, he was with the University of Alberta, Department of Computing Science (1984–2000) where he served as the Acting Chair of the Department during 1994–1995. He has held visiting positions at GTE Laboratories (USA), INRIA Rocquencourt (France), GMD-IPSI, (Germany), University of Jyväskylä (Finland), Technical University of Darmstadt (Germany), University of Udine (Italy), University of Milano (Italy), ETH Zürich (Switzerland), and National University of Singapore.

Dr. Özsu's research is broadly on data science focusing on data engineering. His research follows two threads: large-scale data distribution, and management of non-traditional (i.e., non-relational) data. Currently, his research focus is on graph data and RDF data. Previously his research focus was on object systems, image, video, XML data, and their management in a distributed environment.

He is a Fellow of the Royal Society of Canada, the American Association for the Advancement of Science (AAAS), the Asia-Pacific Artificial Intelligence Association (AAIA), and Balsillie School of International Affairs (BSIA); he is also Life Fellow of the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE). He is an elected member of the Science Academy of Türkiye, and a member of Sigma Xi, The Scientific Research Honor Society. He is the recipient of the ACM Presidential Award (2023), IEEE Technical Committee on Data Engineering (TCDE) Education Award (2024), IEEE Innovation in Societal Infrastructure Award (2022), CS-Can/Info-Can Lifetime Achievement Award (2018), ACM SIGMOD Test-of-Time Award (2015), the ACM SIGMOD Contributions Award (2006), and The Ohio State University College of Engineering Distinguished Alumnus Award (2008). He has won two Google Faculty Research Awards (2009 and 2015) and is the five-time recipient of the University of Waterloo Outstanding Performance Award (2004, 2009, 2014, 2019, 2024). He has held Cheriton Faculty Fellowships (2013–2016, 2018–2024), a University Research Chair position (2004-2011), and a Faculty Research Fellowship (2000–2003) at the University of Waterloo, and a McCalla Research Professorship (1993–1994) at the University of Alberta.

Dr. Özsu is the author/co-author of three books including the classic *Principles of Distributed Database Systems* (with Patrick Valduriez), which is now in its fourth edition. He has edited

twelve books/proceedings including the *Encyclopedia of Database Systems* (with Ling Liu), now in its second edition. He has published over 250 journal and conference papers, one of which was recognized by a test-of-time award, three with best paper awards, and one with best paper honorable mention.

He founded the ACM Books program and served as its Founding Editor-in-Chief (2014-2020). He was also the Founding Series Editor of Morgan & Claypool's Synthesis Lectures on Data Management (2009–2014). He serves as Senior Editor of ACM/IMS Journal on Data Science and Associate Editor of ACM Transactions on Internet Technologies, and is on the editorial boards of Communications of ACM (Research Highlights), FACETS, World Wide Web Journal, and Springer Book Series on Advanced Information & Knowledge Processing and Web Information Systems Engineering and Internet Technologies. He has served as the Program Chair of all three major database conferences: ACM SIGMOD (2014), IEEE ICDE (2007), and VLDB (2004), as well as others. He has been on the Program Committees of many conferences, symposia and workshops.

Dr. Özsu chairs the Steering/Advisory Committee of Polytechnic University of Hong Kong Research Centre on Data Science and AI, and serves on the Advisory Committee of Artificial Intelligence and Data Science Application and Research Centre of Istanbul Technical University (Türkiye), Technical Advisory Committee of National Engineering Laboratory for Big Data Software of Tsinghua University (China), on the Advisory Boards of Hong Kong University of Science and Technology School of Engineering, and Hong Kong University of Science and Technology Big Data Institute.

He previously served on the Board of CS-Can/Info-Can – Canada's computer science professional society (2017–2020), on the Publications Board of Association for Computing Machinery (2002–2017), on the Scientific Advisory Board of National Institute of Informatics of Japan (2011–2017), and on the Technical Expert Advisory Committee of City University of Hong Kong Multimedia Software Engineering Research Center (2014–2019). He was the Chair of ACM Special Interest Group on Management of Data (SIGMOD) (2001–2005), an Editor-in-Chief of The VLDB Journal (1997–2005), an associate editor of ACM Computing Surveys (2005–2009), and a trustee of the VLDB Endowment (1996–2002). He served as the Canadian Association for Computer Science's representative on Computing Research Association's Board of Directors (2010–2013). He was a member and chair the Computer and Information Science Grant Selection Committee of the Natural Sciences and Engineering Research Council of Canada (1991–1994), and served on the Management Committee of the Canadian Genome Analysis and Technology Program (1992–1993).

Education

- **The Ohio State University**, Columbus, Ohio, USA
  Ph.D., Computer and Information Science, 1983; Advisor: Bruce Weide
- **The Ohio State University**, Columbus, Ohio, USA
  M.S., Computer and Information Science, 1981
- **Middle East Technical University**, Ankara, Türkiye
  M.Sc., Industrial Engineering, 1978; Advisor: Esen Özkarahan
- **Middle East Technical University**, Ankara, Türkiye
  B.Sc., Industrial Engineering, 1974

Awards & Honours

- **Major Awards**
  - ACM Presidential Award, 2023
    For "long-standing contributions to the broader computing community and to ACM"
  - IEEE Technical Committee on Data Engineering (TCDE) Education Award, 2024
    For "fundamental contributions to data management and data science pedagogy"
  - IEEE Innovation in Societal Infrastructure Award, 2022
    For "contributions to data science infrastructure and distributed data management"
  - Distinguished Visiting Professor, Tsinghua University, China, 2020

- CS-Can/Info-Can Lifetime Achievement Award, 2018
- University Professor, University of Waterloo, 2018
  For "exceptional scholarly achievement and international pre-eminence"
- University of Waterloo University Research Chair, 2004–2011
- Ohio State University College of Engineering Distinguished Alumnus Award, 2008
- ACM SIGMOD (Special Interest Group on Management of Data) Contributions Award, 2006
  For "long-standing dedicated service to the database research community, including leadership roles in the SIGMOD and VLDB organizations, and innovations in the publication process"

◇ **Fellowships**

- Asia-Pacific Artificial Intelligence Association (AAIA), 2022
- Balsillie School of International Affairs (BSIA), 2022
- American Association for the Advancement of Science (AAAS), 2018
- Royal Society of Canada, 2016
- The Science Academy, Türkiye, 2013
- Institute of Electrical and Electronics Engineers (IEEE), 2011
  For "contributions to distributed data management and multimedia database systems"
- Association for Computing Machinery (ACM), 2006
  For "contributions to distributed data management and service to the database community"

◇ **Publication Awards**

◇ ACM SIGMOD Test-of-Time Award 2015 that recognizes "the best paper from the SIGMOD proceedings 10 years prior, based on the criterion of identifying the paper that has had the most impact (research, products, methodology) over the intervening decade" for paper

– Lei Chen, M. Tamer Özsu, and Vincent Oria. "Robust and Fast Similarity Search for Moving Object Trajectories," In *Proc. ACM SIGMOD International Conference on Management of Data*, 2005, pages 491–502.

◇ Best Paper Award (one of three) at 38th International Conference on Data Engineering, 2022 for paper

– Anil Pacaci, Angela Bonifati, and M. Tamer Özsu. "Evaluating complex queries on streaming graphs," In *Proc. 38th International Conference on Data Engineering*, 2022, pages 272–285.

◇ Best Paper Award, 44th International Conference on Very Large Data Bases, 2018 for paper

– Siddartha Sahu, Amine Mhedhbi, Semih Salihoglu, Jimmy Lin, and M. Tamer Özsu. "The ubiquity of large graphs and surprising challenges of graph processing," *Proc. VLDB Endowment*, 11(4): 420–431, 2018.

◇ Best Paper Award, 23rd International Conference on Database Systems for Advanced Applications, 2018 for paper

– Peng Peng, Lei Zou, M. Tamer Özsu, and Dongyan Zhao. "Multi-Query optimization in Federated RDF Systems," In *Proc. 23rd International Conference on Database Systems for Advanced Applications*, 2018, pages 745–765.

◇ Best Paper Award Honourable Mention, 29th International Conference on Data Engineering, 2013 for paper

– Cagri Balkesen, Jens Teubner, Gustavo Alonso, and M. Tamer Özsu. "Main-Memory Hash Joins on Multi-Core CPUs: Tuning to the Underlying Hardware," In *Proc. 29th IEEE International Conference on Data Engineering*, 2013, pages 362–373.

◇ **Honour Societies**

- Sigma Xi–The Scientific Research Honor Society

◇ **Other Awards**

- University of Waterloo Cheriton Faculty Fellow, 2013–2016, 2018–2021, 2021–2024
- Google Faculty Research Award, 2009 & 2015
- University of Waterloo Outstanding Performance Award, 2004, 2009, 2014, 2019, 2024
- Natural Sciences and Engineering Research Council (NSERC) of Canada Accelerator Award for Exceptional Opportunity, 2013
- ACM Distinguished Lecturer, 2007–2014
- IBM CAS Canada Research Faculty Fellow, 2010–present
- Faculty of Mathematics Fellow, University of Waterloo, 2000–2003
- McCalla Professor, University of Alberta, 1993–1994
- NATO Ph.D. scholarship, through TÜBITAK–The Scientific and Technical Research Council of Türkiye, 1979–1983

Research interests

My research is broadly on data systems and engineering with two foci:

◇ **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/parallel data management of the above data types**

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

Employment

◇ **2020–present:** Tsinghua University, China
Distinguished Visiting Professor

◇ **2018–present:** University of Waterloo, Canada
University Professor

◇ **July 2000–2018:** University of Waterloo, Canada
Professor of Computer Science

◇ **July 2000–June 2005:** University of Alberta
Adjunct Professor

◇ **July 1993–June 2000:** University of Alberta, Canada
Professor 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)

◇ **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, Türkiye
  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, Türkiye
  Industrial Engineer, Electronic Data Processing Dept.

Visiting Positions

- **2011/09–2012/03:** Visiting Professor, ETH Zürich, Department of Computer Science, Switzerland
- **2010/08–2011/03:** KITHCT Visiting Professor, National University of Singapore, School of Computing, Singapore
- **2006/09–2006/12:** Visiting Professor, National University of Singapore, School of Computing, Singapore
- **2006/03–2006/06:** Visiting Professor, ETH Zürich, Department of Computer Science, Switzerland
- **2005/04–2005/05:** Visiting Professor, National University of Singapore, School of Computing, Singapore
- **1998/05:** Visiting Professor, University of Milano, Italy
- **1998/01–1998/03:** Visiting Scientist, GMD-IPSI, Darmstadt, Germany
- **1997/09–1997/12:** Visiting Scientist, INRIA Rocquencourt, Le Chesnay, France
- **1990/07–1991/06:** Visiting Scientist, GTE Laboratories, Waltham, MA, USA

Major Administrative Positions

- **2024/07–present:** Co-Director, Faculty of Mathematics Data Science and Artificial Intelligence Program, University of Waterloo
- **2018/07–present:** Director, Waterloo-Huawei Joint Innovation Lab, University of Waterloo
  Major initiatives: Established funding programs in seven areas (data management, programming languages & compiler technologies, data trust, cloud computing, software engineering, AI, human-computer interaction). Funded 34 projects for a total of $6.3M plus $4.5M matching grants. The lab supported 38 faculty members and 225+ students, producing 125+ publications and two spin-off companies.
- **2014/01–2016/06:** Associate Dean of Research, Faculty of Mathematics, University of Waterloo
  Major initiatives: Represented Math Faculty at VP Research office and its committees, managed Math CFI budget allocation, served on the Waterloo Bibliometrics Committee, chaired Waterloo Bibliometrics Working Group which produced the report *Measuring Research Output through Bibliometrics* (`https://bit.ly/3TtwXGO`).
- **2007/01– 2010/06:** Director, David R. Cheriton School of Computer Science, University of Waterloo
  Major initiatives: Established course-based master's stream, established Master of Health Informatics program, established joint CS-Business program in collaboration with Wilfred Laurier School of Business and Economics, established Women in Computing (WICS) Committee
- **1994/07–1995/06:** Acting Chair, Department of Computing Science, University of Alberta

Educational Experience

- **Program & Course Development:**
  - Member of the committee that established the Master of Data Science and Artificial Intelligence (MDSAI) at the University of Waterloo, serving on its Coordinating Committee (2018–present).
  - Created the Master of Health Informatics, Faculty of Mathematics at the University of Waterloo (2009).

- Created the Computer Science/Business Administration joint degree between University of Waterloo and Wilfred Laurier University (2009).
- Created the course "Data Engineering for Data Science," a graduate level course for the MDSAI program (2024).
- Created the course "Principles of Data Management and Use," a graduate level course for the Master of Health Informatics program, Faculty of Health at the University of Waterloo (2015).
- Led the revision of undergraduate database courses at the University of Waterloo (2005).
- Led the revision of undergraduate database courses at the University of Alberta (1995).
- Created twelve graduate courses at the Universities of Waterloo and Alberta.

◇ **Undergraduate Courses Taught:**

- Principles of Data Management and Use (University of Waterloo)
- Distributed Systems (University of Waterloo)
- Introduction to Database Management (University of Waterloo)
- Computer Applications in Business Databases (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, Türkiye)
- Database Systems (Middle East Technical University, Türkiye)

◇ **Graduate Courses Taught:**

- Disaggregated and Heterogeneous Computing Platform for Graph Processing
- Principles of Data Management and Use (University of Waterloo–hybrid course)
- Big Data Computing Platforms (University of Waterloo)
- Modern Database Systems (University of Waterloo)
- 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)

STUDENTS & POSTDOCS

◇ **Current PhD Students:**

- *Zeynep Korkmaz* (co-supervised with Khuzaima Daudjee)
  Thesis title: Graph-aware locality optimization and cache replacement techniques for graph processing
  Start date: Winter 2013
- *Xiangru Jian*
  Thesis title: Applications of LLMs in data management
  Start date: Fall 2022

- *Kerem Akillioglu*
  Thesis title: To be determined
  Start date: Spring 2024

◇ **Current MMath Students:**

- *Sepideh Abadini*
  Thesis title: Benchmarking natural language to SQL translation systems
  Start date: Fall 2023
- *Arman Davoodi*
  Thesis title: Managing concurrent access to a disaggregated LSM (dLSM) index
  Start date: Fall 2023
- *Harrum Noor*
  Thesis title: Determining correctness of SQL queries using foundational models
  Start date: Fall 2023
- *Sairaj Vorugantii*
  Thesis title: Developing high performance and low construction latency vector index
  Start date: Fall 2023

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

- *Dr. Chao Zhang*
  Fall 2022 – Fall 2024
- *Dr. Aida Sheshbolouki*
  Fall 2023 – Fall 2024

◇ **Graduated PhD Students:**

[19] *Dr. Aida Sheshbolouki*
Thesis title: Mining Butterflies in Streaming Graphs
Graduation date: Fall 2023
Last known employment: Postdoctoral Fellow, University of Waterloo, Canada

[18] *Dr. Khaled Ammar*
Thesis title: Systems and Algorithms for Dynamic Graph Processing
Graduation date: Spring 2023
Last known employment: Borealis.AI, Waterloo, Canada
Co-supervised with Semih Salihoglu

[17] *Dr. Anıl Paçacı*
Thesis title: Query Models and Query Processing over Streaming Graphs
Graduation date: Fall 2022
Last known employment: Apple, Seattle, USA

[16] *Dr. Güneş Aluç*
Thesis title: Scalable, Adaptive, and Distributed RDF Data Management
Graduation date: Fall 2015
Last known employment: SAP Canada, Waterloo, Canada

[15] *Dr. Patrick Kling*
Thesis title: Distributed XML Query Processing
Graduation date: Spring 2012
Last known employment: Google, Waterloo, Canada

[14] *Dr. Yingying Tao*
Thesis title: Mining Time-Changing Data Streams
Graduation date: Spring 2012
Last known employment: CI Investments Inc., Toronto, Canada

[13] *Dr. Qiang Wang*
Thesis title: Efficient Range and Join Query Processing in Massively Distributed Peer-to-Peer Networks
Graduation date: Fall 2008
Last known employment: Oracle Corp., Seattle, WA, USA

[12] *Dr. Ning Zhang*
Thesis title: XQuery Evaluation and Optimization: A Native Approach
Graduation date: Fall 2006
Last known employment: Pinterest, CA, USA

[11] *Dr. Lukasz Golab*
Thesis title: Processing Continuous Queries over On-line Data Streams
Graduation date: Fall 2006
Last known employment: Associate Professor of Management Science, University of Waterloo, Waterloo, Canada
Winner of Alumni Gold Medal

[10] *Dr. Lei Chen*
Thesis title: Similarity Search Over Time Series and Trajectory Data
Graduation date: Spring 2005
Last known employment: Dean and Chair Professor of Computer Science at Hong Kong University of Science and Technology (Guongzhou), China

[9] *Dr. Kaladhar Voruganti*
Thesis title: Studies on Client Caching DBMS Architectures and Algorithms
Graduation date: Spring 2001
Last known employment: VP, Technology Innovation, Equinix, Redwood City, 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
Last known employment: Master, Product Management, Hitachi Vantara, San Jose, CA, USA

[7] *Dr. Yuri Leontiev*
Thesis title: Type System for an Object-Oriented Database Programming Language
Graduation date: Fall 1999
Last known employment: Endeavor Technologies Corp., Edmonton, Canada
Winner of 1999 Governor General Award and 2001 NSERC Doctoral Dissertation Award
Co-supervised with Duane Szafron

[6] *Dr. Iqbal Gorawalla*
Thesis title: Temporal Aspects and Rule Systems in Object-Oriented Database Systems
Graduation date: Spring 1998
Last known employment: Principal Consultant at Triton Consulting, UK.
Co-supervised with Duane Szafron

[5] *Dr. John Z. Li*
Thesis title: Query Languages for Multimedia Database Systems and their Optimization
Graduation date: Spring 1998
Last known employment: Data Architect, Compugen Inc, Toronto, Ontario, Canada
Co-supervised with Duane Szafron

[4] *Dr. Randal Peters*
Thesis title: Formal Models, Views and Languages for Object-Oriented Database Systems
Graduation date: Spring 1994
Last known employment: Instructor at Red River College and Director of IT, Sherpa (EMS) Ltd., Winnipeg, Canada

[3] *Dr. Dave D. Straube*
Thesis title: Queries and Query Processing in Object Oriented Database Systems
Graduation date: Spring 1991
Last known employment: Microsoft Corporation, Redmond, WA, USA (retired).

[2] *Dr. Kenneth Barker*
Thesis title: Transaction Management in Multidatabase Systems
Graduation date: Fall 1990
Last known employment: Professor of Computer Science, University of Calgary, Calgary, Canada

[1] *Dr. Abdel A. Farrag*
Thesis title: Concurrency and Consistency in Database Systems
Graduation date: Spring 1986
Last known employment: Professor of Computer Science, Dalhousie University, Halifax, Canada (retired).

◇ **Graduated Master's Students:**

[39] *Ipsita Mohanty*
Thesis title: Triangle count estimation and label prediction over uncertain streaming graphs
Graduation date: Fall 2024
Last known employment: Huawei Technologies Canada, Markham, Canada

[38] *Kerem Akillioglu*
Thesis title: Cardinality Estimation in Streaming Graph Data Management Systems
Graduation date: Spring 2024
Last known employment: PhD Student, University of Waterloo, Cheriton School of Computer Science

[37] *Libo Gao*
Thesis title: Streaming WatDiv –A Streaming RDF Benchmark
Graduation date: Spring 2018
Last known employment: Wish, Toronto, Canada

[36] *Yan Zhang*
Thesis title: Efficient Structure-Aware Query Processing over Large Property Graphs
Graduation date: Spring 2018 **Last known employment:** IBM Toronto Laboratories, Markham, Canada

[35] *Ning Zhang*
Non-thesis master's
Graduation date: Fall 2014
Last known employment: Google, Kitchener, Canada

[34] *Yuke Yang*
Thesis title: ViewDF: a Flexible Framework for Incremental View Maintenance in Stream Data Warehouses
Graduation date: Fall 2013
Last known employment: Senior Staff Engineer, DoorDash, San Francisco, CA, USA

[33] *Xin Zhan*
Essay title: Survey on Energy Efficient Computing
Graduation date: Spring 2010
Last known employment: RBC Capital Markets, Toronto, Canada

[32] *Amod Gupta*
Thesis title: Audio Processing on Constrained Devices
Graduation date: Spring 2010
Last known employment: Head of Product, Traceable, Los Altos, CA USA

[31] *Jack Ng*
Essay title: Extending Progressive Optimization to a Shared-Nothing Parallel Database Architecture
Graduation date: Spring 2007
Last known employment: Huawei Technologies, Markham, Canada

[30] *Emre Cem Özgen*
Thesis title: View Selection in XML Query Processing
Graduation date: Fall 2006
Last known employment: Salesforce, CA, USA

[29] *Sam Lightstone*
Thesis title: Automated Design of Multi-Dimensional Clustering Tables for Relational Databases
Graduation date: Spring 2004
Last known employment: Airbnb, Toronto, Canada

[28] *Mohammad Hossain Sheikh Attar*
Thesis title: Alternative Architectures and Protocols for Providing Strong Consistency in Dynamic Web Applications
Graduation date: Spring 2004
Last known employment: unknown

[27] *Weimin Li*
Thesis title: XComp: An XML Compression Tool
Graduation date: Fall 2003
Last known employment: Economic Insurance Group, Waterloo, Canada.

[26] *Catalin Visinescu*
Thesis title: Incremental Data Distribution on Internet-Based Distributed Systems: A Spring System Approach
Graduation date: Fall 2003
Last known employment: NCC Group, Kitchener, Canada.

[25] *Sunny K.S. Lam*
Thesis title: WebQA: A Web Querying Using the QA Approach
Graduation date: Spring 2002
Last known employment: Hard Rock Digital, Markham, Canada.

[24] *Yuxin (Leon) Cao*
Thesis title: The Evaluation of Strong Web Caching Consistency Algorithms
Graduation date: Spring 2002
Last known employment: STMicroelectronics, Mississauga, Canada

[23] *Shu Lin*
Thesis title: An Extendible Hashing Structure for Image Similarity Searches
Graduation date: Fall 2000
Last known employment: Huawei Technologies, Markham, Canada

[22] *Justin Amalraj*
Thesis title: Performance Evaluation of Optimistic Cache Consistency Algorithms for Web-based Electronic Commerce Applications
Graduation date: Fall 2000
Last known employment: Winner's, Kanata, Canada

[21] *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 employment: Microsoft Australia, Sydney, Australia

[20] *Bing Xu*
Thesis title: Design and Development of a Visual Query Interface for DISIMA Image DBMS
Graduation date: Spring 2000
Last known employment: IBM Canada, Toronto, Canada

[19] *Irene Lin-Oi Cheng*
Thesis title: Image Databases: A Content-Based Type System and Query by Similarity Match
Graduation date: Spring 1999
Last known employment: Scientific Director, Multimedia Research Centre, University of Alberta

[18] *Adriana Zubiri (Manas)*
Thesis title: Design and Implementation of an Object Database for Injury Surveillance
Graduation date: Fall 1997
Last known employment: Vice President, Data Centers and Operational Resiliency, RBC, Toronto, Canada.

[17] *Sherine El-Medani*
Thesis title: Coupling an SGML Compiler With a Multimedia Database Management System
Graduation date: Fall 1996
Last known employment: Juniper Networks, Ottawa, Canada
Co-supervised with Duane Szafron

[16] *Manuela Junghaans (Schone)*
Thesis title: A Generic Type System for Object-Oriented Multimedia Databases
Graduation date: Fall 1996
Last known employment: Siemens AG, Berlin, Germany
Co-supervised with Duane Szafron

[15] *Ghada El-Medani*
Thesis title: A Visual Query Facility for Multimedia Databases
Graduation date: Fall 1995
Last known employment: Senior Manager, Engineering, Wind River Systems, Ottawa, Canada
Co-supervised with Duane Szafron

[14] *Chiradeep Vittal*
Thesis title: Design and Implementation of an Object-Oriented Multimedia Database System for News-on-Demand
Graduation date: Fall 1995
Last known employment: CTO, Stealth, Sunnyvale, CA, USA
Co-supervised with Duane Szafron

[13] *Adriana Munoz*
Thesis title: An Extensible Query Optimizer Architecture for the TIGUKAT Objectbase Management System
Graduation date: Spring 1994
Last known employment: Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA

[12] *Kaladhar Voruganti*
Thesis title: Benchmarking for new database application domains
Graduation date: Spring 1993
Last known employment: See above under Former PhD students
Essay-based master's

[11] *Yun Wang*
Thesis title: Advanced Transaction Models and Management Strategies for Object-Oriented

Database Systems
Graduation date: Spring 1993
Last known employment: Destiny Software, Wishohocken, Pennsylvania, USA
Essay-based master's

[10] *Ana Dominguez*
Thesis title: A Query Optimization Strategy for Multidatabase Systems
Graduation date: Fall 1993
Last known employment: Government of Alberta, Edmonton, Canada.

[9] *Boman B. Irani*
Thesis title: Implementation of TIGUKAT Object Model
Graduation date: Fall 1993
Last known employment: Sun Microsystems, Palo Alto, CA, USA

[8] *Anna P. Lipka*
Thesis title: The Design and Implementation of TIGUKAT User Languages
Graduation date: Fall 1993
Last known employment: Autodesk, Toronto, Ontario, Canada.

[7] *Youping Niu*
Thesis title: Network Communication Overhead in Distributed Concurrency Control Performance
Graduation date: Fall 1990
Last known employment: unknown

[6] *Yan Li*
Thesis title: Communication in FLEX
Graduation date: Spring 1990
Last known employment: unknown

[5] *Meei Fen Teo*
Thesis title: Experiments on the Implementation of Database Buffer Management Strategies in Virtual Memory Environments
Graduation date: Spring 1989
Last known employment: unknown

[4] *Kok-Lung Wong*
Thesis title: Distributed Simulation of Performance Petri Nets
Graduation date: Fall 1988
Last known employment: unknown

[3] *David Meechan*
Thesis title: A Heuristic Approach to Query Processing
Graduation date: Spring 1988
Last known employment: Zim Technologies International, Barbados

[2] *Christina Lau*
Thesis title: Object Management, Protection and Scheduling in FLEX
Graduation date: Spring 1988
Last known employment: IBM Laboratories, Markham, Canada

[1] *Tse-Men Koon*
Thesis title: Performance of Resilient Synchronization Mechanisms for Distributed Databases
Graduation date: Spring 1986
Last known employment: unknown

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

- Dr. Himchan Park, March 2021–March 2022. Degree from Korea Advanced Institue of Science and Technology.

- Dr. Guoqing Xiao, October 2017–October 2019. Degree from Hunan University, China.
  Last known employment: Associate Professor in Computer Science and Technology, Hunan University, China.
- Dr. Bojana Bislimovska, October 2015–September 2018. Degree from Politecnico di Milano, Italy.
  Last known employment: SAP Canada, Waterloo, Canada.
- Dr. Xiaofei Zhang, December 2015–September 2018. Degree from Hong Kong University of Science and Technology.
  Last known employment: Associate Professor, Department of Computer Science, University of Memphis, USA.
- Dr. Olaf Hartig, November 2012–November 2014. Degree from Humboldt Universität zu Berlin, Germany.
  Last known employment: Associate Professor (Docent), Department of Computer and Information Science, Linköping University, Sweden.
- Dr. Reza Akbarania, December 2007-December 2008. Degree from Université de Nantes, France.
  Last known employment: Research Scientist at INRIA Sophia Antipolis - Méditerranée Research Center, Lirmm Laboratory, Université de Montpellier, France.
- Dr. Susanne Busse, July–September 2007, Degree from Technische Universität Berlin.
  Last known employment: Professor at Fachhochschule Brandenburg, Fachbereich Informatik und Medien.
- Dr. Vincent Oria, University of Alberta, May 1996–December 1999. Degree from Ecole Nationale Supérieure des Télécommunications, France.
  Last known employment: Chair and Professor of Computer Science at New Jersey Institute of Technology, Newark, NJ, USA.
- Paul Iglinski, University of Alberta. January 1995–July 2000.
  Last known employment: University of Alberta (retired).

◇ **Past Visiting Students:**

- Yuedan Chen, PhD student at Hunan University, China, October 2018–October 2019 (graduation date: 2020). Currently Associate Professor, Central South University, China.
- Youhuan Li, PhD student at Peking University, China, September 2016–April 2017. Currently Assistant Professor, Hunan University, China.
- Bojana Bislimovska, PhD student at Politecnico di Milano, Italy, June-September 2012 and June-September 2013. Currently at SAP, Canada.
- Tao Chen, PhD student at National University of Defense Technology, China, October 2009–March 2011 (graduation date: 2011). Currently researcher at Beijing Proteome Research Center, Beijing Institute of Radiation Medicine, China.
- Lei Zou, PhD student at Huazhong University of Science and Technology, China, September 2008-October 2009 (graduation date: 2009). Currently Professor, Institute of Computer Science & Technology, Peking University, China.
- Raymond Chi Wing Wong, PhD student at Chinese University of Hong Kong, June-July 2008 (graduation date: 2008). Currently 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 Senior Scientist at Qatar Computing Research Institute, Qatar.
- Yueguo Chen, PhD student at National University of Singapore, April - June 2007 (graduation date: 2009). Currently Professor, Department of Computer Science, Renmin University, China.

- Xiaoyan Yang, PhD student at National University of Singapore, April - June 2007 (graduation date: 2012). Currently Researcher at Advanced Digital Sciences Center, Singapore.
- 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, Türkiye, 2001-2002 (graduation date: 2003). Currently Professor and Chair, Department of Computer Engineering, Istanbul Technical University, Türkiye.
- 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:**

- Baran Gayretli, Sabanci University, Türkiye, Summer 2019.
- Kerem Akillioglu, Sabanci University, Türkiye, Summer 2018.
- Boshen Cui, University of Waterloo, Fall 2017.
- Runsheng Guo, University of Waterloo, Fall 2017.
- Vincent Luong, University of Waterloo, Spring 2017.
- Anzo Zhao Yang Teh, University of Waterloo, Spring 2017.
- Heli Wang, University of Waterloo, Spring 2017.
- Anselme Goetschmann, University of Waterloo, Spring 2017.
- Weiyan Zhu, University of Waterloo, Spring 2017.
- Zhuoran Yu, University of Waterloo, Spring & Fall 2017.
- Amod Gupta, Indian Institute of Information Technology, Allahabad, India, Spring 2006.
- Kumar Gaurav Bijay, Indian Institute of Technology, Bombay, India, 2005.
- Abhay Kumar Jha, Indian Institute of Technology, Bombay, India, Spring 2005.
- Piyush Prahladka, Indian Institute of Technology, Bombay, India, Spring 2004.
- Shishir K. Agrawal, Indian Institute of Technology, Bombay, India, Spring 2004.
- Varun Kochalia, Indian Institute of Technology, Bombay, India, Spring 2003.
- Shaveen Garg, Indian Institute of Technology, Bombay, India, Spring 2003.
- Shariq Rizvi, Indian Institute of Technology, Bombay, India, Spring 2002.
- Nitin Khendelwal, Indian Institute of Technology, Bombay, India, Spring 2002.
- Andreas Doms, Dresden University of Technology, Germany, 2001-2002.
- Mirko Seifert, Dresden University of Technology, Germany, 2001-2002.
- Bilal Shirazi, University of Waterloo, Spring 2002.
- Aameek Singh, Indian Institute of Technology, Bombay, India, Spring 2001.

◇ **External Examiner:**

- Davide Piantella, Politecnico di Milano, Italy, 2024 (PhD).
- Hassan Halawa, University of British Columbia, 2023 (PhD).
- Misha Genkin, Carleton University, 2021 (PhD).
- Priyanka Vashisht, Thapar University, India, 2017 (PhD).
- Vincent Leroy, University of Grenoble, France 2017 (Rapporteur for Habilitation à Diriger les Rescherches).

- Sairam Gurajada, Saarland University, Germany, 2017 (PhD).
- Sobhan Badiozamany, University of Uppsala, Sweden, 2016 (PhD)
- Stamatis Zampetakis, Université Paris-Sud and Inria-Saclay, France, 2015 (PhD)
- Le Thuy Ngoc, National University of Singapore, 2014 (PhD)
- Laurent Amsaleg, Université de Rennes 1, France, 2014 (Rapporteur for Habilitation à Diriger les Rescherches)
- Cagri Balkesen, ETH Zürich, Switzerland, 2014 (PhD)
- Erietta Liarou, Universiteit van Amsterdam, The Netherlands, 2013 (PhD)
- Alexandru Maga, ETH Zürich, Switzerland, 2011 (PhD)
- Sadegh Nobari, National University of Singapore, 2012 (PhD)
- Michael Duller, ETH Zürich, Switzerland, 2011 (PhD)
- Huayu Wu, National University of Singapore, 2011 (PhD)
- Irina Magdalena Botan, ETH Zürich, Switzerland, 2011 (PhD)
- Liang Xu, National University of Singapore, 2010 (PhD)
- Ladjel Bellatreche, Université de Poitiers, France, 2009, (Rapporteur for Habilitation à Diriger les Rescherches)
- Haifeng Liu, University of Toronto, Canada, 2009 (PhD)
- Nan Tang, Chinese University of Hong Kong, Hong Kong, 2008 (PhD)
- Eric Lo, ETH Zürich, Switzerland, 2007 (PhD)
- Christian Plattner, ETH Zürich, Switzerland, 2006 (PhD)
- Changqing Li, National University of Singapore, 2006 (PhD)
- Attila Barta, University of Toronto, Canada 2006 (PhD)
- Thomas Heimrich, Technical University of Ilmenau, Germany, 2005 (PhD)
- Timour Katchaounov, University of Uppsala, Sweden, 2003 (PhD)
- Henrique Paques, Georgia Institute of Technology, USA, 2003 (PhD)
- Andrea Calì, Università di Roma La Sapienza. Italy, 2002 (PhD)
- Henrike Berthold, Dresden University of Technology, Germany, 2002 (PhD)
- Ioana Manolescu, Université de Versailles, France, 2001(PhD; 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)

Professional Activities

◇ **Advisory Boards**

- Member, Advisory Committee, Hong Kong Polytechnic University Department of Computing, 2024–present.

- Member, Advisory Board, Hong Kong University of Science and Technology, School of Engineering, 2009–2014, 2017–2020, 2024–2027.
- Chair, Advisory/Steering Committee, Hong Kong Polytechnic University Research Centre on Data Science and AI, 2021–present.
- Member, Advisory Council, Istanbul Technical University Artificial Intelligence and Data Science Application and Research Centre, 2020–present.
- Member, Advisory Council, Huawei Distributed Scheduling and Data Engine Lab, Markham, Canada, 2018–present.
- Member & Chair, Advisory Board, Hong Kong University of Science and Technology, Department of Computer Science and Engineering, 2009–2012, 2014–2017 & 2020–2023.
- Member, Advisory Board, Hong Kong University of Science and Technology Big Data Institute, 2017–present (`http://www.cse.ust.hk/BDI/`)
- Member, Technical Advisory Board, Tsinghua University National Engineering Laboratory for Big Data Software, 2017–present
- Member, International Advisory Board, National Institute of Informatics (NII), Tokyo, Japan, 2011–2017 (`http://www.nii.ac.jp/en/`).
- Member, Technical Expert Advisory Committee, City University of Hong Kong Multimedia Software Engineering Research Center, 2014-2019 (`http://www.cityu.edu.hk/merc/`).

◇ **Professional Societies**

- Member of the CS-Can/Info-Can Research Committee, 2022–present
- Member of the Board, CS-Can/Info-Can, 2017–2020 (`http://cscan-infocan.ca`)
- Member of the Board, Computing Research Association (CRA), Canadian Association of Computer Science (CACS/AIC) Representative, 2009–2013.
- Member, ACM Publications Board, 2002–2017.
- Member, ACM SIGMOD Advisory Board, 2015–2017.
- Member, Proceedings of VLDB Advisory Board, 2014–2021.
- Chair, ACM Special Interest Group on Data Management–SIGMOD (`http://www.sigmod.org`), 2001–2005.
- Trustee, VLDB Endowment (`http://www.vldb.org`), 1996–2002.
- Member, International Federation for Cooperative Information Systems Board, 1999–2002.

◇ **Program Reviews**

- University of Hong Kong, Bachelor of Engineering in Computer Science Program, 2024.
- University of Calgary (Canada), Data Science program (undergraduate) , 2022.
- McMaster University (Canada), MacDATA Institute, 2022.
- Carleton University (Canada), Data Science and Analytics Graduate Program, 2020.
- INRIA (France), Data and Knowledge Representation and Processing Theme, 2019.
- Hong Kong University of Science and Technology, School of Engineering, 2018, 2013.
- Hong Kong University of Science and Technology, Department of Computer Engineering, 2014.
- University of British Columbia (Canada) Department of Computer Science, 2010.
- University of California-Santa Barbara (USA), Computer Science Department, 2001.
- York University (Canada), Department of Computer Science, 2001.

◇ **Others**

- Member, Royal Society of Canada Fellow Selection Committee, 2024–2026.

- Member, CRA Committee on Scholarly Practices in Computing, 2013–2014.

  See report at `http://archive2.cra.org/uploads/documents/resources/bpmemos/BP_Memo`

- 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:**

- Founding Editor-in-Chief, *ACM Book Series*, ACM, 2013–2019.

  Series home page: `http://books.acm.org`

- Founding Series Editor, *Synthesis Lectures on Data Management*, Morgan & Claypool, 2009–2013.

  Series home page: `http://www.morganclaypool.com/toc/dtm/1/1`.
  Published 38 books

- Co-Editor-in-Chief, *Encyclopedia of Database Systems, 2nd edition*, Springer, 2019.
- Editorial Board Member, *Web Information Systems Engineering and Internet Technologies*, Springer (2005–present).
- Editorial Board Member, *Advanced Information and Knowledge Processing*, Springer (2002–2013).

◇ **Journal Activities:**

- Senior Editor, *ACM/IMS Journal on Data Science*, ACM & IMS, 2021–present.
- Associate Editor, *ACM Transactions on Internet Technologies*, ACM, 2019–present.
- Editorial Board Member, *Communications of ACM* (Research Highlights), ACM, 2022–present.
- Editorial Board Member, *World Wide Web Journal - Internet and Web Information Systems*, Springer, 2001–present.
- Editorial Board Member, *Frontiers of Computer Science*, 2018–present.
- Editorial Board Member, *FACETS*, 2018–present.
- Editorial Board Member, *Knowledge and Information Systems*, 2003–2018.
- Advisory Board Member, *International Journal for Next-Generation Computing*, 2011–present.
- Associate Editor, *Proceedings of VLDB Endowment*, 2018–2020, 2024–2025.
- Review Board Member, *Proceedings of VLDB Endowment*, 2009–2015, 2015–2016, 2021.
- Editorial Board Member, *Journal of Information and Data Management*, Brazilian Computer Society, 2010–2013.
- Senior Advisory Board Member, *ACM Journal on Data and Information Quality*, ACM, 2007–2013.
- Editorial Board Member, *Information Technology and Management*, Springer, 1997–2013.
- 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 Databasesl*, 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:

- *ICDE Workshop on Coupling of Large Language Models with Vector Data Management for Enhancing Data Science*, 2025.
- *VLDB Workshop on Serverless Data Analytics*: 2024.
- *35th IEEE International Conference on Management of Data* (ICDE): 2019.
- *APWeb-WAIM Joint Conference on Web and Big Data*: 2017.
- *18th Asia-Pacific Web Conference* (APWeb): 2016.
- *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:

- *The 8th IEEE International Conference on Big Knowledge* (ICBK): 2017.
- *ACM SIGMOD International Conference on Management of Data* (SIGMOD): 2014.
- *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 or Senior PC Member:

- *ACM SIGMOD International Conference on Management of Data*: 2013, 2019, 2020, 2021.
- *IEEE International Conference on Data Engineering*, 1993, 2003, 2006, 2011, 2021, 2022, 2023, 2025.
- *International Conference on Extending Database Technology*, 2021, 2022, 2023, 2025, 2026.
- *ACM International Conference on Information and Knowledge Management*: 2015, 2016, 2017.
- *IEEE International Conference on Distributed Computing Systems*: 1992, 1996.
- *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.
- *ACM International Conference on Management of Data* (SIGMOD): 1994, 1996, 1999, 2007, 2008, 2009, 2010, 2016, 2017, 2018.
- *IEEE International Conference on Data Engineering* (ICDE): 1991, 1996, 1997, 1999, 2000, 2002, 2004, 2012, 2015, 2016.
- *ACM Symposium on Cloud Computing* (SOCC): 2020.
- *International Conference on Extending Database Technology* (EDBT): 2006, 2008, 2009.
- *International Conference on Similarity Search and Applications* (SISAP): 2016
- *International World Wide Web Conference* (WWW): 2007.
- *International Conference on Principles of Distributed Systems (OPODIS)*: 2014.
- *IEEE International Conference on Big Data*: 2014.
- *International Conference on Big Data and Smart Computing (BigData)*: 2015.
- *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), 2013.
- *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:

- Best Paper Selection Committee Chair, *IEEE International Conference on Data Engineering*: 2023.
  item Best Paper Selection Committee , *International Conference on Extending Database Technoloogy*: 2023. 1

- Best Paper Selection Committee Chair, *ACM SIGMOD International Conference on Management of Data*: 2013.
- 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, Türkiye, 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, Türkiye, 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**

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

- Icelandic Research Fund.
- Portuguese Foundation for Science and Technology.

University Service

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

◇ **University and Faculty Level Committees**

2022–present: Member, *Waterloo Awards Committee*

2020–present: Member, *Faculty of Mathematics Innovation and Entrepreneurship Working Group*

2020–2021: Member, *Waterloo Institute for Sustainable Energy Internal Board of Management*

2018–2022: Member, *Faculty of Mathematics Data Science Program Committee*

2017–present: Member, *Honorary Degrees Committee*, Faculty of Mathematics

2019-2020: Member, *Faculty of Mathematics Dean Nominating Committee*

2019-2020: Member, *Cheriton School of Computer Science Director Nominating Committee*

2012–2017 Member, *Waterloo Bibliometrics Committee*

2015/06–2016/06: Chair, *Waterloo Bibliometrics Working Group*

2014/01–2016/06: Associate Dean of Research, *Faculty of Mathematics*

2014/01–2016/06: Member, *Senate Graduate and Research Committee*

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*

1998–1999: 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*

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

◇ **Academic Unit Level Committees**

2022–present: Chair, *Awards Committee*

2012–2014: Member, *Advisory Committee on Appointments*; Member, *Graduate Recruiting Committee*

2007/01–2010/06: Director, David R. Cheriton School of Computer Science

2006–2007: Member, *Tenure and Promotion Committee*

2005–2006: Member, *Tenure and Promotion Committee*; Chair, *Undergraduate Recruiting Committee*

2003–2004: Member, *Advisory Committee on Appointments*

2002–2003: Member, *Advisory Committee on Appointments*

2001–2002: Member, *Graduate Committee*; Member, *Infrastructure Committee*; Member, *Advisory Committee on Appointments*

1998–1999: Chair, *Computing Resources Policy Committee*; Member, *Recruiting Committee*; Member, *Executive Committee*

1994/07–1995/06: Acting Chair, Department of Computing Science

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*

Research & Other Funding

Total of about $15M. Unless otherwise noted, all of the following are 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 †.

- Advanced Topics in Graph Data Management and Processing, NSERC Discovery Grant, 2024-2028, $48,000/year.
- Disaggregated and Heterogeneous Computing Platform, NSERC RTI Grant, 2024, $150,000.
- BIOSCAN: Tracing the Patterns of Life on a Changing Planet, New Frontiers in Research Fund - Transformation, 2021–2027, $4,000,000/year; personal portion $62,500/year.
- Scaling-Out Streaming Graph Processing Graph Processing, NSERC Collaborative Research Grant, 2019–2022, $94,200/year.
- Highly Scalable Graph Processing, NSERC Discovery Grant, 2019–2024, $41,000/year.
- Streaming Graph Processing at Scale, Waterloo-Huawei Joint Innovation Laboratory, 2018–2021, $75,000/year.
- Canadian Workshop on Data Science, NSERC CONNECT Grant, 2018, $23,600.
- Scaling the Cluster Computing Infrastructure for Scalable Big Data Management and Analysis. Canada Foundation for Innovation Infrastructure Operating Fund, 2017–2022, $39,000 (joint with Ian Munro and Khuzaima Daudjee).
- Approximate Graph Query Answering over Streaming Microblogs, NSERC Collaborative Research and Development Grant, 2016–2017, $76,545. Matches the Google Faculty Research Award.
- Scaling the Cluster Computing Infrastructure for Scalable Big Data Management and Analysis. Canada Foundation for Innovation and Ontario Research Fund, 2016, $264,050 (joint with Ian Munro and Khuzaima Daudjee).
- Approximate Query Answering over Streaming Microblogs Using Graph Models. Google Faculty Research Award, 2015, US$39,000.
- RDF Data Management. NSERC Discovery Grant, 2014–2019, $54,000/year.

- NSERC Accelerator Grant, 2014–2017, $40,000/year.
- 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, 2013–2015, $28,000/year.
- Focusing on the Data in Web-Scale Data Integration. Business Intelligence NSERC Strategic Network, 2012–2013, $25,000 (joint with Ashraf Aboulnaga).
- 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, 2010–2017, $4,899,045.
- Beyond Mashups: Data Integration for End-Users. Google Faculty 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.

◇ **Tutorials at Conferences:**

Reachability Indexes on Graphs (with Chao Zhang and Angela Bonifati). *ACM SIGMOD International Conference on Management of Data*, June 2023, Seattle, Washington (1.5 hours).

Linked Data Query Processing (with Olaf Hartig). *30th IEEE International Conference on Data Engineering*, April 2014, Chicago, Illinois (1.5 hours).

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, Türkiye (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 Fransisco, 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 Fransisco, 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:**

Introduction to Data Science, Balsillie School of International Affairs, Waterloo, Canada, 22 March 2024 (3 hours).

Foundations of Big Data Systems. Peking University, Beijing, China, 9–14 July 2018 (24 hours).

Components of Modern Database Systems. VLDB Summer School, Tsinghua University, Beijing, China, 27–28 July 2015 (1.5 days, 9 hours).

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'été 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, Türkiye (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 Tecnologico 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 Talks

◇ **Keynotes and Distinguished Lectures:**

Streaming Graph Processing & Analytics, Keynote at the 3rd International Workshop on Large Scale Graph (LSGDA), co-located with VLDB 2024 Conference, Guangzhou, China, 26 August 2024. (Remotely delivered)

Graph Processing: A Panaromic View and Some Open Problems, Keynote at XiuHu Lake Seminar on "Large Scale Graph Computing and Intelligent Systems", Shenyang, China, 24 May 2024. (Remotely delivered)

Streaming Graph Processing & Analytics, Distinguished Lecture at 2023 Bund Summit – 2nd International Forum on Graph Intelligence, Shanghai, China, 7 September 2023. (Remotely delivered)

Disaggregated & Heterogeneous Platform for Data Management, Keynote at Symposium on Frontiers in Databases (SiftDB 2023), Hulunbuir, China, 30 June - 2 July 2023. (Remotely delivered)

A Systematic View of Data Science, Keynote at Data Systems Meet Data Science Workshop, Montreal, Canada, 5–6 June 2023.

A Systematic View of Data Science, Keynote at IEEE International Conference on Big Data, 20 December 2022. (Remotely delivered)

Distributed RDF Data Management and Processing, Keynote at 5th APWeb-WAIM International Joint Conference on Web and Big Data, 23-25 August 2021. (Remotely delivered)

Distributed RDF Data Management and Processing, Keynote at 2021 "Artificial Intelligence and High-Performance Computing" International Graduate Summer School and Innovation Forum, Hunan University, 18 August 2021. (Remotely delivered)

A Systematic View of Data Science, Distinguished Lecture at Istanbul Technical University Artificial Intelligence and Data Science Applied Research Center, 11 June 2021. (Remotely delivered)

A Systematic View of Data Science, Distinguished Lecture at Polytechnic University of Hong Kong Research Centre on Data Science and AI, 11 June 2021. (Remotely delivered)

Streaming Graph Processing & Analytics, Keynote at 14th ACM International Conference on Distributed and Event-based Systems, Montreal, Canada, 13-75 July 2020. (Remotely delivered)

Graph Processing: A Panaromic View and Some open Problems, Keynote at the 45th International Conference on Very Large Data Bases, Los Angeles, USA, 26-30 August 2019.

An Introduction to Graph Analytics Platforms, Keynote at VLDB 2018 Workshop on Advances in Mining Large-Scale Time-Dependent Graphs, Rio de Janeiro, Brazil, 31 August 2018.

Web Data Management in RDF Age, IEEE International Conference on Big Data and Smart Computing (BigComp), Shanghai, China, 15-18 January 2018.

Web Data Management in RDF Age, Keynote at IEEE International Conference on Distributed Computing Systems (ICDCS), Atlanta, USA, 5-8 June 2017.

Web Data Management in RDF Age, Keynote at 20th International Database Engineering & Applications Symposium, Ottawa, Canada, 11-13 July 2016.

Web Data Management in RDF Age, Distinguished Lecture at University of Alberta, Department of Computer Science, 16 September 2015.

Web Data Management in RDF Age, Keynote at 1st International Forum on Big Search, Malbourne, Australia, 31 May 2015.

Personal Reflections on Academic Research and Publishing, Keynote at PhD Symposium, 40th Int. Conf. on Very Large Data Bases, Hangzhou, China, 1 September 2014.

gStore: A Graph-based SPARQL Query Engine, Distinguished Lecture at Korea Advanced Institute of Science and Technology, Department of Computer Science 30 September 2013.

Reflections on Academic Research and Publishing, Keynote at ACM SIGMOD/PODS PhD Symposium, New York, 23 June 2013.

RDF Data Management, University of Pennsylvania, Distinguished Lecture at Department of Computer Science, 3 December 2012.

Internet Scale Data Distribution: Some Research Problems, Distinguished Lecture at 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, Keynote at 7th International XML Database Symposium (XSym 2010), Singapore, 17 September 2010.

Distributed XML Processing, Keynote at 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, Keynote at 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, Keynote at IEEE International Conference on Distributed Computing Systems (ICDCS), Toronto, Canada, 25-29 June 2007.

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

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

Query Processing and Optimization in Native XML Databases, Keynote at 4th International XML Database Symposium (XSym 2006), Seoul, Korea, 10-11 September 2006.

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

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

Query Processing in Data Stream Systems, Keynote at 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, Keynote at 12th International Multimedia Modeling Conference, Beijing, China, 3-6 January 2006.

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

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

Database Issues in Stream Data Management, Distinguished Lecture Middle East Technical University, Ankara, Türkiye, 19 October 2003.

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

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

Distributed Data Management Issues in a Changing Environment, Keynote at 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, Keynote at 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, Keynote at 11th International Workshop on Research Issues on Data Engineering (RIDE 2001), Heidelberg, Germany, 1-2 April 2001.

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

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

Issues in Multimedia Data Management, Keynote at 13e Journès de Bases de Donnṡ Avancès (BDA), Grenoble, France, September 9–12, 1997.

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

2024:

- *A Systematic View of Data Science*, Balsillie School of International Affairs Summer School on Technology Governance, 12–23 August 2024.
- *Data Systems for Data Science*, Balsillie School of International Affairs Summer School on Technology Governance, 12–23 August 2024.

2023:

- *Disaggregated & Heterogeneous Platform for Data Management*, Tsinghua University, School of Software, 20 December 2023 (remotely delivered).
- *A Systematic View of Data Science*, University of Waterloo, MDSAI Program Industry Panel, 15 November 2023.
- *Data Systems for Data Science*, Balsillie School of International Affairs Summer School on Technology Governance, 14–18 August 2023.
- *A Systematic View of Data Science*, Balsillie School of International Affairs Summer School on Technology Governance, 14–18 August 2023.
- *Disaggregated & Heterogeneous Platform for Data Management*, Huawei 2012 Labs Global Software Technology Summit, Markham, 9 May 2023.

2022:

- *Streaming Graph Processing at Scale*, Tsinghua University, 6 December 2022. (Remotely delivered)
- *Distributed RDF Data Management and Processing*, Peking University, 24 November 2022.
- *Streaming Graph Processing at Scale*, Huawei Science and Technology Week (STW), 27 September 2022. (Remotely delivered)
- *A Systematic View of Data Science*, Seoul National University, 25 May 2022. (Remotely delivered)
- *A Systematic View of Data Science*, Simon Fraser University, Trustworthy Data Science and AI Series, 27 April 2022. (Remotely delivered)
- *A Systematic View of Data Science*, Pohang University of Science and Technology, Korea, 24 January 2022. (Remotely delivered)
- *A Systematic View of Data Science*, Mohammed VI Polytechnic University School of Computer Science, Morocco, 24 January 2022. (Remotely delivered)
- *A Systematic View of Data Science*, Peking University Institute for Computer Science, 15 January 2022. (Remotely delivered)

2021:

- *A Systematic View of Data Science*, Tsinghua University, 16 December 2021. (Remotely delivered)
- *Streaming Graph Processing at Scale*, Waterloo-Huawei Joint Innovation Lab Annual Workshop, 8 June 2021. (Remotely delivered)
- *Distributed RDF Data Management and Processing*, Stanford University (as a guest lecture in the Knowlege Graphs graduate seminar course), 8 April 2021.

2020:

- *Streaming Graph Processing and Analytics*, Data Science Forum, East China Normal University, 2 December 2020. (Remotely delivered)

- *Graph Processing: A Panaromic View and Some open Problems*, Tsinghua University, 22 October 2020. (Remotely delivered)
- *Graph Processing: A Panaromic View and Some open Problems*, Peking University, 30 June 2020. (Remotely delivered)
- *Streaming Graph Processing & Analytics*, Peking University, 22 July 2020. (Remotely delivered)

2019:

- *Graph Processing: A Panaromic View and Some open Problems*, Dagstuhl Workshop on Big Graph Processing Systems, Dagstuhl, Germany, 2 December 2019.

2018:

- *An Introduction to Graph Analytics Platforms*, Fudan University, School of Computing, Shanghai, China, 15 January 2018.
- *An Introduction to Graph Analytics Platforms*, East China Normal University, School of Data Science and Engineering, Shanghai, China, 18 January 2018.

2017:

- *Approaches to RDF Data Management and SPARQL Query Processing*, Inria & Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier, Montpellier, France, 9 March 2017.
- *An Introduction to Graph Analytics Platforms*, 8th IEEE Conference on Big Knowledge, Hefei, China, 9–10 August 2017.
- *Web Data Management in the RDF Age*, Hefei University of Technology, Hefei, China, 11 August 2017.

2016:

- *Graph Analytics Platforms*, Huawei Strategy and Technology Workshop, Shenzhen, China, 18 May 2016.
- *Web Data Management in RDF Age*, North Carolina State University, Department of Computer Science, Raleigh, NC, 15 April 2016.
- *An Introduction to Graph Analytics Platforms*, Invited Talk at Spring School "Models, Systems, and Algorithms for Role-based Business Intelligence Applications", Dagstuhl, Germany, 7–9 March 2016 (3 hour lecture).

2015:

- *An Overview of Graph Data Management and Analysis*, Croucher Advanced Study Institute: Frontiers in Big Graph Research, Hong Kong, 16–18 December 2015 (3 hour lecture).
- *An Overview of Graph Data Management and Analysis*, Australian Database Conference PhD School, Melbourne, Australia, 4 June 2015 (3 hour lecture).
- *Web Data Management in RDF Age*, University of Queensland, School of Information Technology and Electrical Engineering, Brisbane, Australia, 5 June 2015.

2014:

- *Web Data Management in RDF Age*, Polytechnic University of Hong Kong, 26 November 2014.
- *Web Data Management in RDF Age*, Multimedia Software Engineering Research Centre of City University of Hong Kong, Shenzhen, 26 November 2014.
- *An Experimental Comparison of Pregel-like Graph Processing Systems*, OPODIS Workshop, Paris, France, 30 September 2014.
- *Web Data Management in RDF Age*, Inria Saclay, France, 1 October 2014.
- *Personal Reflections on Academic Research and Publishing*, PhD Workshop, 40th Int. Conf. on Very Large Databases, 1 September 2014.

- *Web Data Management in RDF Age*, Modern Database Systems Summit, Tsinghua University, China, 29-31 August 2014.
- *Web Data Management in RDF Age*, Peking University, Institute of Computer Science & Technology, 29 August 2014.

2013:

- *gStore: A Graph-based SPARQL Query Engine*, SAP Labs Korea, 2 October 2013.
- *gStore: A Graph-based SPARQL Query Engine*, Seoul National University, 1 October 2013.
- *gStore: A Graph-based SPARQL Query Engine*, University of Tokyo, 12 March 2013.

2012:

- *RDF Data Management*, University of Manitoba, Department of Computer Science, 29 June 2012.
- *RDF Data Management*, University of Zürich, Department of Computer Science, 1 March 2012.
- *RDF Data Management*, Università degli Studi dell'Insubria, 8 February 2012.
- *RDF Data Management*, Politecnico di Milano, Department of Computer Science, 7 February 2012.
- *Internet-Scale Data Distribution: Some Research Problems*, University of Basel, Department of Mathematics and Computer Science, 19 January 2012.
- *RDF Data Management*, Technische Universität München, Fakültat für Informatik, 11 January 2012.
- *RDF Data Management*, Ludwig-Maximilians-Universität München, Institut für Informatik,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, Faculty of Computer Science, 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.
- *Internet-Scale Data Distribution: Some Research Problems* Maltepe University, 28 May 2010, Istanbul, Türkiye.

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.

PUBLICATIONS

◇ **Authored/Co-authored Books:**

[A3] M. Tamer Özsu and Patrick Valduriez. *Principles of Distributed Database Systems*. Springer, 4th edition, 2020.
The book has been translated into:

- Portugese (second edition)
- Chinese (third edition), Tsinghua University Press, 2014.

[A2] Lukasz Golab and M. Tamer Özsu. *Data Stream Systems*. Synthesis Lectures on Data Management. Morgan & Claypool, 2010.

[A1] M. Tamer Özsu. *Project Planning and Control Techniques*. Turkish Information Processing Society Press, 1986. (in Turkish).

◇ **Edited Books/Proceedings:**

[B12] Ling Liu and M. Tamer Özsu, editors. *Encyclopedia of Database Systems*. Springer, 2nd edition, 2019.

[B11] 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.

[B10] 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.

[B9] Mario Nascimento, M. Tamer Özsu, and Osmar Zaïane, editors. *Proc. International Database Engineering & Applications Symposium*. IEEE Computer Society, 2002.

[B8] 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, 2001.

[B7] Asuman Dogac, M. Tamer Özsu, and Ozgur Ulusoy, editors. *Current Trends in Data Management Technology*. Idea Group Publishers, 1999.

[B6] 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.

[B5] Asuman Dogac, L. Kalinichenko, M. Tamer Özsu, and Amit P. Sheth, editors. *Advances in Workflow Systems and Interoperability*. Springer, 1998.

[B4] A. Dogac, M.T. Özsu, A. Biliris, and T. Sellis, editors. *Advances in Object-Oriented Database Systems*. Springer, 1994.

[B3] M. Tamer Özsu, Umeshwar Dayal, and Patrick Valduriez, editors. *Distributed Object Management*. Morgan Kaufmann, 1994.

[B2] O. Bukhres, M. Tamer Özsu, and M.C. Shan, editors. *Proc. RIDE'95 Workshop on Distributed Object Management*. IEEE Computer Society, 1985.

[B1] M. Tamer Özsu and J. Schaeffer, editors. *Proc. CIPS (Canadian Information Processing Society) Edmonton '86 Conf.*, 1986.

◇ **Chapters in Books:**

[C15] Patrick Valduriez, Ricardo Jimenez-Peris, and M. Tamer Özsu. Distributed database systems: The case for NewSQL. In Abdelkader Hameurlain and A. Min Tjoa, editors, *Transactions on Large-Scale Data- and Knowledge-Centered Systems*, pages 1–15. Springer, Berlin, Heidelberg, 2021.

[C14] M. Tamer Özsu and Patrick Valduriez. Distributed and parallel database systems. In Heikki Topi and Allen B. Tucker, editors, *Computing Handbook*, volume 2: Information Systems and Information Technology of *Computing Handbook Set*, chapter 13. CRC Press, 3rd edition, 2014.

[C13] Ning Zhang and M. Tamer Özsu. XML native storage and query processing. In C. Li and T. W. Ling, editors, *Advanced Applications and Structures in XML Processing: Label Streams, Semantics Utilization and Data Query Technologies*, chapter 1, pages 1–17. IGI Global, 2010.

[C12] M. Tamer Özsu and Patrick Valduriez. Distributed and parallel database systems. In Allen B. Tucker, editor, *Handbook of Computer Science and Engineering*, chapter 58. CRC Press, 2nd edition, 2004.

[C11] M. Tamer Özsu. Distributed database systems. In H. Bigdoli, editor, *Encyclopedia of Information Systems*, pages 673–682. Academic Press, 2002.

[C10] M. Tamer Özsu and Bin Yao. Building component database systems using CORBA. In Klaus Dittrich and Andreas Geppert, editors, *Component Database Systems*, pages 207–236. Morgan Kaufmann, 2001.

[C9] Iqbal Goralwalla, M. Tamer Özsu, and Duane Szafron. An object-oriented framework for temporal data models. In Opher Etzion, Sushil Jajodia, and S. Sripada, editors, *Temporal Databases: Research and Practice*, pages 1–35. Morgan Kaufmann, 1998.

[C8] Ling Liu, Lingling Yan, and M. Tamer Özsu. Interoperability in large-scale distributed information delivery systems. In Asuman Dogac, Leonid Kalinichenko, M. Tamer Özsu, and Amit P. Sheth, editors, *Advances in Workflow Systems and Interoperability*, pages 246–280. Springer, 1998.

[C7] M. Tamer Özsu and Patrick Valduriez. Distributed and parallel database systems. In Allen B. Tucker, editor, *Handbook of Computer Science and Engineering*, pages 1093–1111. CRC Press, 1997.

[C6] M. Tamer Özsu. Transaction models and transaction management in object-oriented database management systems. In A. Doğaç, M.T. Özsu, A. Biliris, and T. Sellis, editors, *Advances in Object-Oriented Database Systems*, pages 147–184. Springer, 1994.

[C5] M. Tamer Özsu, Umeshwar Dayal, and Patrick Valduriez. An introduction to distributed object management. In M. Tamer Özsu, Umeshwar Dayal, and Patrick Valduriez, editors, *Distributed Object Management*, pages 1–24. Morgan Kaufmann, 1994.

[C4] M. T. Özsu and J. Blakeley. Query processing in object-oriented database systems. In W. Kim, editor, *Modern Database Management – Object-Oriented and Multidatabase Technologies*, pages 146–174. Addison-Wesley/ACM Press, 1994

[C3] M. Tamer Özsu, Dave D. Straube, and R. Peters. Query processing issues in object-oriented knowledge base systems. In F.E. Petry and L.M. Delcambre, editors, *Intelligent Database Technology: Approaches and Applications*, volume 1, pages 79–144. JAI Press, 1994.

[C2] M. T. Özsu and P. Valduriez. Distributed data management: Unsolved problems and new issues. In T. Casavant and M. Singhal, editors, *Readings in Distributed Computing Systems*, pages 512–544. IEEE/CS Press, 1994.

[C1] A. Buchmann, M. Tamer Özsu, M. Hornick, Dimitrios Georgakopoulos, and F.A. Manola. A transaction model for active distributed object systems. In Ahmed K. Elmagarmid, editor, *Transaction Models for Advanced Database Applications*, pages 123–158. Morgan Kaufmann, 1992.

◇ **Refereed Journal Papers:**

[D79] Peng Peng, Shengyi Ji, M. Tamer Özsu, and Lei Zou. Minimum motif-cut: a workload-aware RDF graph partitioning strategy. *VLDB J.*, 33(5):1517–1542, 2024.

[D78] Chao Zhang, Angela Bonifati, and M. Tamer Özsu. Incremental sliding window connectivity over streaming graphs. *Proc. VLDB Endowment*, 17(10):2473–2486, 2024.

[D77] Ruihong Wang, Chuqing Gao, Jianguo Wang, Prishita Kadam, M. Tamer Özsu, and Walid G. Aref. Optimizing LSM-based indexes for disaggregated memory. *VLDB J.*, 2024. Accepted for publication.

[D76] Li Zeng, Lei Zou, and M. Tamer Özsu. SGSI – a scalable GPU-friendly subgraph isomorphism algorithm. *IEEE Trans. Knowl. and Data Eng.*, 35(11):11899–11916, 2023.

[D75] M. Tamer Özsu. Data science—a systematic treatment. *Commun. ACM*, 66(7):106–116, 2023.

[D74] M. Tamer Özsu. Proper scoping of data science: A guide for policy makers. *Balsillie Papers*, 5(4), 2023.

[D73] Aida Sheshbolouki and M. Tamer Özsu. SGrow: explaining the scale-invariant strength assortativity of streaming butterflies. *ACM Trans. Web*, 17(3):Article 24, 2023.

[D72] Ruihong Wang, Jianguo Wang, Stratos Idreos, M. Tamer Özsu, and Walid G. Aref. The case for distributed shared-memory databases with RDMA-enabled memory disaggregation. *Proc. VLDB Endowment*, 16(1):15–22, 2022

[D71] Khaled Ammar, Siddhartha Sahu, Semih Salihoglu, and M. Tamer Özsu. Optimizing differentially-maintained recursive queries on dynamic graphs. *Proc. VLDB Endowment*, 15(11):3186–3198, 2022

[D70] Youhuan Li, Lei Zou, M. Tamer Özsu, and Dongyan Zhao. Space-efficient subgraph search over streaming graph with timing order constraint. *IEEE Trans. Knowl. and Data Eng.*, 34(9):4453–4467, 2022.

[D69] Da Yan, Guimu Guo, Jalal Khalil, M. Tamer Özsu, Wei-Shinn Ku, and John C. S. Lui. G-thinker: a general distributed framework for finding qualified subgraphs in a big graph with load balancing. *VLDB J.*, 31(2):287–320, 2022.

[D68] Aida Sheshbolouki and M. Tamer Özsu. SGrapp: butterfly approximation in streaming graphs. *ACM Trans. Knowl. Discov. Data*, 16(4):Article no 76, 2022.

[D67] Sherif Sakr, Angela Bonifati, Hannes Voigt, Alexandru Iosup, Khaled Ammar, Renzo Angles, Walid Aref, Marcelo Arenas, Maciej Besta, Peter A. Boncz, Khuzaima Daudjee, Emanuele Della Valle, Stefania Dumbrava, Olaf Hartig, Bernhard Haslhofer, Tim Hegeman, Jan Hidders, Katja Hose, Adriana Iamnitchi, Vasiliki Kalavri, Hugo Kapp, Wim Martens, M. Tamer Özsu, Eric Peukert, Stefan Plantikow, Mohamed Ragab, Matei R. Ripeanu, Semih Salihoglu, Christian Schulz, Petra Selmer, Juan F. Sequeda, Joshua Shinavier, Gábor Szárnyas, Riccardo Tommasini, Antonino Tumeo, Alexandru Uta, Ana Lucia Varbanescu, Hsiang-Yun Wu, Nikolay Yakovets, Da Yan, and Eiko Yoneki. The future is big graphs: A community view on graph processing systems. *Commun. ACM*, 64(9):62—71, 2021.

[D66] Peng Peng, Qi Ge, Lei Zou, M. Tamer Özsu, Zhiwei Xu, and Dongyan Zhao. Optimizing multi-query evaluation in federated RDF systems. *IEEE Trans. Knowl. and Data Eng.*, 33(4):1692–1707, 2021.

[D65] Guimu Guo, Da Yan, M. Tamer Özsu, Zhe Jiang, and Jalal Khalil. Scalable mining of maximal quasi-cliques: An algorithm-system codesign approach. *Proc. VLDB Endowment*, 14(4):573–585, 2020.

[D64] Yuedan Chen, Guoqing Xiao, M. Tamer Özsu, Chubo Liu, Albert Y. Zomaya, and Tao Li. aeSpTV: An adaptive and efficient framework for sparse tensor-vector product kernel on a high-performance computing platform. *IEEE Trans. Parall. Dist. Sys.*, 31(10):2329–2345, 2020.

[D63] Xiaofei Zhang and Tamer Özsu. Correlation constraint shortest path over large multi-relation graphs. *Proc. VLDB Endowment*, 12(5):488–501, 2019.

[D62] Günes Aluç, M. Tamer Özsu, and Khuzaima Daudjee. Building self-clustering RDF databases using tunable-LSH. *VLDB J.*, 28(2):173—195, 2019.

[D61] Semih Salihoglu and M. Tamer Özsu. Response to 'Scale up or scale out for graph processing?'. *IEEE Internet Comput.*, 22(5):18–24, 2018.

[D60] Khaled Ammar and M. Tamer Özsu. Experimental analysis of distributed graph systems. *Proc. VLDB Endowment*, 11(10):1151–1164, 2018.

[D59] Siddhartha Sahu, Amine Mhedhbi, Semih Salihoglu, Jimmy Lin, and M. Tamer Özsu. The ubiquity of large graphs and surprising challenges of graph processing. *Proc. VLDB Endowment*, 11(4):420–431, 2017.

[D58] Yuke Yang, Lukasz Golab, and M. Tamer Özsu. ViewDF: Declarative incremental view maintenance for streaming data. *Inf. Syst.*, 71:55–67, 2017.

[D57] Lei Zou and M. Tamer Özsu. Graph-based RDF data management. *Data Science and Engineering*, 2(1):56–70, 12 2017.

[D56] Da Yan, James Cheng, M. Tamer Özsu, Fan Yang, Yi Lu, John C.S. Liu, Qizhen Zhang, and Wilfred Ng. A general-purpose query-centric framework for querying big graphs. *Proc. VLDB Endowment*, 9(7):564–575, 2016.

[D55] Peng Peng, Lei Zou, M. Tamer Özsu, Lei Chen, and Dongyan Zhao. Processing SPARQL queries over distributed RDF graphs. *VLDB J.*, 25(2):243–268, 2016.

[D54] Cagri Balkesen, Jens Teubner, Gustavo Alonso, and M. Tamer Özsu. Main-memory hash joins on modern processor architectures. *IEEE Trans. Knowl. and Data Eng.*, 27(7):1754–1766, 2015.

[D53] Minyang Han, Khuzaima Daudjee, Khaled Ammar, M. Tamer Özsu, Xingfang Wang, and Tianqi Jin. An experimental comparison of Pregel-like graph processing systems. *Proc. VLDB Endowment*, 7(12):1047–1058, 2014.

[D52] Prima Chairunnanda, Khuzaima Daudjee, and M. Tamer Özsu. ConfluxDB: multi-master replication for partitioned snapshot isolation databases. *Proc. VLDB Endowment*, 7(11):947–958, 2014.

[D51] Lei Zou, M. Tamer Özsu, Lei Chen, Xuchuan Shen, Ruizhe Huang, and Dongyan Zhao. gStore: A graph-based SPARQL query engine. *VLDB J.*, 23(4):565–590, 2014.

[D50] Güneş Aluç, M. Tamer Özsu, and Khuzaima Daudjee. Workload matters: Why RDF databases need a new design. *Proc. VLDB Endowment*, 7(10):837–840, 2014.

[D49] Çagri Balkesen, Gustavo Alonso, Jens Teubner, and M. Tamer Özsu. Multi-core, main-memory joins: Sort vs. hash revisited. *Proc. VLDB Endowment*, 7(1):85–96, 2013.

[D48] Feng Li, Beng Chin Ooi, M. Tamer Özsu, and Sai Wu. Distributed data management using MapReduce. *ACM Comput. Surv.*, 46(3):Article No. 31, 2014.

[D47] Tao Chen, Lei Chen, M. Tamer Özsu, and Nong Xiao. Optimizing multi-top-k queries over uncertain data streams. *IEEE Trans. Knowl. and Data Eng.*, 25(8):1814–1829, 2013.

[D46] Lei Zou, Lei Chen, M. Tamer Özsu, and Dongyan Zhao. Answering pattern match queries in large graph databases via graph embedding. *VLDB J.*, 21(1):97–120, 2012.

[D45] Raymond Chi-Wing Wong, M. Tamer Özsu, Ada Wai-Chee Fu, Philip S. Yu, Lian Liu, and Yubao Liu. Maximizing bichromatic reverse nearest neighbor for L_p-norm in two- and three-dimensional spaces. *VLDB J.*, 20(6):893–919, ember 2011.

[D44] Patrick Kling, M. Tamer Özsu, and Khuzaima Daudjee. Scaling XML query processing: Distribution, localization and pruning. *Distrib. Parall. Databases*, 29(5-6):445–490, 2011.

[D43] Gang Chen, Hoang Tam Vo, Sai Wu, Beng Chin Ooi, and M. Tamer Özsu. A framework for supporting DBMS-like indexes in the cloud. *Proc. VLDB Endowment*, 4(11):702–713, 2011.

[D42] Lei Zou, Jinghui Mo, Lei Chen, M. Tamer Özsu, and Dongyan Zhao. gStore: answering SPARQL queries via subgraph matching. *Proc. VLDB Endowment*, 4(8):482–493, 2011.

[D41] Patrick Kling, M. Tamer Özsu, and Khuzaima Daudjee. Generating efficient execution plans for vertically partitioned XML databases. *Proc. VLDB Endowment*, 4(1):1–11, 2010.

[D40] Eric Lo, Carsten Binnig, Donald Kossmann, M. Tamer Özsu, and Wing-Kai Ho. A framework for testing DBMS features. *VLDB J.*, 19(2):203–230, 2010.

[D39] Raymond Chi-Wing Wong, M. Tamer Özsu, Philip S. Yu, Ada Wai-Chee Fu, and Lian Liu. Efficient method for maximizing bichromatic reverse nearest neighbor. *Proc. VLDB Endowment*, 2(1):1126–1137, 2009.

[D38] Lei Zou, Lei Chen, and M. Tamer Özsu. k-automorphism: a general framework for privacy preserving network publication. *Proc. VLDB Endowment*, 2(1):946–957, 2009.

[D37] Lei Zou, Lei Chen, and M. Tamer Özsu. Distance-join: pattern match query in a large graph database. *Proc. VLDB Endowment*, 2(1):886–897, 2009.

[D36] Qian Wan, Raymond Chi-Wing Wong, Ihab F. Ilyas, M. Tamer Özsu, and Yu Peng. Creating competitive products. *Proc. VLDB Endowment*, 2(1):898–909, 2009.

[D35] Qiang Wang, Khuzaima Daudjee, and M. Tamer Özsu. Popularity-aware prefetch in P2P range caching. *Peer-to-Peer Networking and Applications*, 3(2):145–160, 2010.

[D34] Yingguang Li, M. Tamer Özsu, and Kian-Lee Tan. XCube: Processing XPath queries in a hypercube overlay network. *Peer-to-Peer Networking and Applications*, 2(2):128–145, 2009.

[D33] Christian Plattner, Gustavo Alonso, and M. Tamer Özsu. Extending DBMSs with satellite databases. *VLDB J.*, 17:657–682, 2008.

[D32] Ilaria Bartolini, Paula Ciaccia, Vincent Oria, and M. Tamer Özsu. Flexible integration of multimedia sub-queries with qualitative preferences. *Multimedia Tools & Applications*, 33(3):275–300, 2007.

[D31] M. Hossein Sheikh Attar and M. Tamer Özsu. Alternative architectures and protocols for providing strong consistency in dynamic web applications. *World Wide Web J.*, 9(3):215–251, 2006.

[D30] Dunren Che, Karl Aberer, and M. Tamer Özsu. Query optimization in XML structured-document databases. *VLDB J.*, 15(3):263–289, 2006.

[D29] Jie Lian, Kshirasagar Naik, Gordon B. Agnew, Lei Chen, and M. Tamer Özsu. BBS: an energy-efficient localized routing scheme for query processing in wireless sensor network. *Int. J. of Distributed Sensor Networks*, 2(1):23—54, 2006.

[D28] Şule Gündüz-Öğüdücü and M. Tamer Özsu. Incremental click-stream tree model: Learning from new users for web page prediction. *Distrib. Parall. Databases*, 19(1):5–27, 2006.

[D27] Esther Pacitti, Cédric Coulon, Patrick Valduriez, and M. Tamer Özsu. Preventive replication in a database cluster. *Distrib. Parall. Databases*, 18(3):223–251, 2005.

[D26] Vincent Oria, M. Tamer Özsu, and Paul Iglinski. Foundation of the DISIMA image query languages. *Multimedia Tools & Applications*, 23(3):185–201, 2004.

[D25] Lei Chen, M. Tamer Özsu, and Vincent Oria. MINDEX: An efficient index structure for salient-object-based queries in video databases. *Multimedia Syst.*, 10(1):56–71, 2004.

[D24] Kaladhar Voruganti, M. Tamer Özsu, and Ronald C. Unrau. An adaptive data-shipping architecture for client caching data management systems. *Distrib. Parall. Databases*, 15(2):137–177, 2004.

[D23] Vincent Oria and M. Tamer Özsu. Views or points of view on images. *Int. J. Image Graphics*, 3(1):55–80, 2003.8

[D22] Lukasz Golab and M. Tamer Özsu. Issues in data stream management. *ACM SIGMOD Rec.*, 32(2):5–14, 2003 (lightly refereed).

[D21] Yuri Leontiev, M. Tamer Özsu, and Duane Szafron. On type systems for object-oriented database programming languages. *ACM Comput. Surv.*, 34(4):409–449, 2002.

[D20] L. Y. Cao and M. Tamer Özsu. Evaluation of strong consistency web caching techniques. *World Wide Web J.*, 5(2):95–124, 2002.

[D19] Iqbal A. Goralwalla, Yuri Leontiev, M. Tamer Özsu, Duane Szafron, and Carlo Combi. Temporal granularity: Completing the puzzle. *J. Intell. Information Syst.*, 16(1):41–63, 2001.

[D18] Iqbal A. Goralwalla, Duane Szafron, M. Tamer Özsu, and Randal J. Peters. A temporal approach to managing schema evolution in object database systems. *Data & Knowl. Eng.*, 28(1):73–105, 1998.

[D17] Asuman Dogac, Cevdet Dengi, and M. Tamer Özsu. Distributed object computing platforms. *Commun. ACM*, 41(9):95–103, 1998.

[D16] Johnny W. Wong, Kelly A. Lyons, David Evans, Rolf J. Velthuys, Gregor von Bochmann, Eric Dubois, Nicolas D. Georganas, Gerald W. Neufeld, M. Tamer Özsu, Jeff Brinskelle, Abdelhakim Hafid, Norman C. Hutchinson, Paul Iglinski, Brigitte Kerhervé, Louise Lamont, Dwight J. Makaroff, and Duane Szafron. Enabling technology for distributed multimedia applications. *IBM Systems J.*, 36(4):489–507, 1997.

[D15] Randal J. Peters and M. Tamer Özsu. An axiomatic model of dynamic schema evolution in objectbase systems. *ACM Trans. Database Syst.*, 22(1):75–114, 1997.

[D14] Iqbal Goralwalla, M. Tamer Özsu, and Duane Szafron. Modeling medical trials in pharmacoeconomics using a temporal object model. *Computers in Biology and Medicine – Special Issue on Time Oriented Systems in Medicine*, 27(5):369–387, 1997.

[D13] M. Tamer Özsu and Patrick Valduriez. Distributed and parallel database systems. *ACM Comput. Surv.*, 28(1):125–128, 1996.

[D12] M. Tamer Özsu, Duane Szafron, Ghada El-Medani, and Chiradeep Vittal. An object-oriented multimedia database system for a news-on-demand applications. *Multimedia Syst.*, 3(5-6):182–203, 1995.

[D11] M. Tamer Özsu, Randal G. Peters, Boman Irani, Anna Lipka, Adriana Munoz, and Duane Szafron. TIGUKAT: A uniform behavioral objectbase management system. *VLDB J.*, 4(3):445–492, 1995.

[D10] Dave D. Straube and M. Tamer Özsu. Query optimization and execution plan generation in object-oriented data management systems. *IEEE Trans. Knowl. and Data Eng.*, 7(2):210–227, April 1995.

[D9] M. Tamer Özsu and Dave D. Straube. Issues in query model design in object-oriented database systems. *Comp. Standards & Interfaces*, 13:157–167, 1991.

[D8] M. T. Özsu and P. Valduriez. Distributed database systems: Where are we now? *Computer*, 24(8):68–78, 1991. Also appears in *Database Programming & Design*, March 1992 and April 1992 issues.

[D7] D.D. Straube and M. T. Özsu. Queries and query processing in object-oriented database systems. *ACM Trans. Information Syst.*, 8(4):387–430, 1990.

[D6] M. Tamer Özsu and D.J. Meechan. Join processing heuristics in relational database systems. *Inf. Syst.*, 15(4):429–444, 1990.

[D5] M. Tamer Özsu and D.J. Meechan. Finding heuristics for processing selection queries in relational database systems. *Inf. Syst.*, 15(3):359–373, 1990.

[D4] A. A. Farrag and M. T. Özsu. Using semantic knowledge of transactions to increase concurrency. *ACM Trans. Database Syst.*, 14(4):503–525, 1989.

[D3] M. Tamer Özsu, Kok-Lung Wong, and Tse-Men Koon. System modeling and analysis using petri nets. *Journal Systems Analysis – Modeling – Simulation*, 5(1):3–25, 1988.

[D2] A. A. Farrag and M. T. Özsu. Towards a general concurrency control algorithm for database systems. *IEEE Trans. Softw. Eng.*, 13(10):1073–1079, 1987.

[D1] M. Tamer Özsu. Modeling and analysis of distributed database concurrency control algorithm using an extended petri net formalism. *IEEE Trans. Softw. Eng.*, SE–11(10):1225–1240, October 1985.

◇ **Refereed Conference/Symposium/Workshop Papers:**

[E130] Alexander Zhou, Yue Wang, Lei Chen, and M. Tamer Özsu. Positive communities on signed graphs that are not echo chambers: A clique-based approach. In *Proc. 40th IEEE Int. Conf. on Data Engineering*, pages 2531–2543, 2024.

[E129] Ruihong Wang, Jianguo Wang, Prishita Kadam, M. Tamer Özsu, and Walid G. Aref. dLSM: an LSM-based index for memory disaggregation. In *Proc. 39th IEEE Int. Conf. on Data Engineering*, pages 2835–2849, 2023.

[E128] Lin Hu, Lei Zou, and M. Tamer Özsu. GAMMA: a graph pattern mining framework for large graphs on GPU. In *Proc. 39th IEEE Int. Conf. on Data Engineering*, pages 273–286, 2023.

[E127] Yuedan Chen, Guoqing Xiao, M. Tamer Özsu, Zhuo Tang, Albert Y. Zomaya, and Kenli Li. Exploiting hierarchical parallelism and reusability in tensor kernel processing on heterogeneous HPC systems. In *Proc. 38th IEEE Int. Conf. on Data Engineering*, pages 2522–2535, 2022.

[E126] Anil Pacaci, Angela Bonifati, and M. Tamer Özsu. Evaluating complex queries on streaming graphs. In *Proc. 38th IEEE Int. Conf. on Data Engineering*, pages 272–285, 2022. **Best paper award**.

[E125] Peng Peng, M. Tamer Özsu, Lei Zou, Cen Yan, and Chengjun Liu. MPC: minimum property-cut RDF graph partitioning. In *Proc. 38th IEEE Int. Conf. on Data Engineering*, pages 192–204, 2022.

[E124] Xiaofei Zhang, M. Tamer Özsu, and Lei Chen. ELite: cost-effective approximation of exploration-based graph analysis. In *Proc. 3rd ACM SIGMOD Joint Int. Workshop on Graph Data Management Experiences & Systems (GRADES) and Network Data Analytics (NDA)*, pages 6:1–6:10, 2020.

[E123] Anil Pacaci, Angela Bonifati, and M. Tamer Özsu. Regular path query evaluation on streaming graphs. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 1415–1430, 2020.

[E122] Da Yan, Guimu Guo, Md Mashiur Rahman Chowdhury, M. Tamer Özsu, Wei-Shinn Ku, and John C. S. Lui. G-thinker: A distributed framework for mining subgraphs in a big graph. In *Proc. 36th IEEE Int. Conf. on Data Engineering*, pages 1369–1380, 2020.

[E121] Li Zeng, Lei Zou, M. Tamer Özsu, Lin Hu, and Fan Zhang. GSI: GPU-friendly subgraph isomorphism. In *Proc. 36th IEEE Int. Conf. on Data Engineering*, pages 1249–1260, 2020.

[E120] Anil Pacaci and M. Tamer Özsu. Analysis of streaming algorithms for graph partitioning analysis of streaming algorithms for graph partitioning. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 1375–1392, 2019.

[E119] Youhuan Li, Lei Zou, M. Tamer Özsu, and Dongyan Zhao. Time constrained continuous subgraph search over streaming graphs. In *Proc. 35th IEEE Int. Conf. on Data Engineering*, pages 1082 – 1093, 2019.

[E118] Libo Gao, Lukasz Golab, M. Tamer Özsu, and Gunes Aluc. Stream WatDiv – a streaming RDF benchmark. In *Proc. Int. Workshop on Semantic Big Data*, pages 3:1–3:6, 2018.

[E117] Anil Pacaci and M. Tamer Özsu. Distribution-aware stream partitioning for distributed stream processing systems. In *Proc. 5th ACM SIGMOD Workshop on Algorithms and Systems for MapReduce and Beyond*, pages 6:1–6:10, 2018.

[E116] Peng Peng, Lei Zou, M. Tamer Özsu, and Dongyan Zhao. Multi-query optimization in federated RDF systems. In *Proc. 23rd Int. Conf. on Database Systems for Advanced Applications*, pages 745–765, 2018. **Best paper award**.

[E115] Anil Pacaci, Alice Zhou, Jimmy Lin, and M. Tamer Özsu. Do we need specialized graph databases?: Benchmarking real-time social networking applications. In *Proc. 5th Int. Workshop on Graph Data Management Experiences & Systems*, pages 12:1–12:7, 2017.

[E114] Olaf Hartig and M. Tamer Özsu. Walking without a map: Ranking-based traversal for querying linked data. In *Proc. 15th Int. Semantic Web Conf.*, pages 305–324, 2016.

[E113] Yuke Yang, Lukasz Golab, and M. Tamer Özsu. ViewDF: declarative incremental view maintenance for streaming data. In *Proc. Intl. Workshop on Real-Time Business Intelligence and Analytics*, 2015

[E112] Güneş Aluç, M. Tamer Özsu, Khuzaima Daudjee, and Olaf Hartig. Executing queries over schemaless RDF databases. In *Proc. 31st IEEE Int. Conf. on Data Engineering*, pages 807–818, 2015.

[E111] Bojana Bislimovska, Güneş Aluç, M. Tamer Özsu, and Piero Fraternali. Graph search of software models using multidimensional scaling. In *Proc. EDBT Workshops*, pages 163–170, 2015.

[E110] Güneş Aluç, Olaf Hartig, M. Tamer Özsu, and Khuzaima Daudjee. Diversified stress testing of RDF data management systems. In *Proc. 13th Int. Semantic Web Conf.*, pages 197–212, 2014.

[E109] Olaf Hartig and M. Tamer Özsu. Reachable subwebs for traversal-based query execution. In *Proc. 26th Int. World Wide Web Conf. (Companion Volume)*, pages 541–546, 2014.

[E108] F. Li, M. T. Özsu, G. Chen, and B. C. Ooi. R-Store: A scalable distributed system for supporting real-time analytics. In *Proc. 30th IEEE Int. Conf. on Data Engineering*, pages 40–51, 2014.

[E107] Çagri Balkesen, Nesime Tatbul, and M. Tamer Özsu. Adaptive input admission and management for parallel stream processing. In *Proc. 7th Int. Conf. Distributed Event-Based Systems*, pages 15–26, 2013.

[E106] Çagri Balkesen, Jens Teubner, Gustavo Alonso, and M. Tamer Özsu. Main-memory hash joins on multi-core CPUs: Tuning to the underlying hardware. In *Proc. 29th IEEE Int. Conf. on Data Engineering*, pages 362–373, 2013. **Best Paper Award Honourable Mention**.

[E105] James Cheng, Yiping Ke, Shumo Chu, and M. Tamer Özsu. Efficient core decomposition in massive networks. In *Proc. 27th IEEE Int. Conf. on Data Engineering*, pages 51–62, 2011.

[E104] Lei Zou, Lei Chen, M. Tamer Özsu, and Dongyan Zhao. Dynamic skyline queries in large graphs. In *Proc. 15th Int. Conf. on Database Systems for Advanced Applications*, pages 62–78, 2010.

[E103] Yingying Tao and M. Tamer Özsu. Efficient decision tree construction for mining time-varying data streams. In *Proc. Conf. of the IBM Centre for Advanced Studies on Collaborative Research*, 2009.

[E102] Yingying Tao and M. Tamer Özsu. Mining frequent itemsets in time-varying data streams. In *Proc. 18th ACM Int. Conf. on Information and Knowledge Management*, pages 1521–1524, 2009. (Short paper).

[E101] Yingying Tao and M. Tamer Özsu. Mining data streams with periodically changing distributions. In *Proc. 18th ACM Int. Conf. on Information and Knowledge Management*, pages 887–896, 2009.

[E100] Umar Qasim, Vincent Oria, Yi-Fang Brook Wu, Michael E. Houle, and M. Tamer Özsu. A partial order based active cache for recommender systems. In *Proc. 3rd ACM Conf. on Recommender Systems*, pages 209–212, 2009.

[E99] Qiang Wang, Rui Li, Lei Chen, Jie Lian, and M. Tamer Özsu. Speed up semantic search in P2P networks. In *Proc. 17th ACM Int. Conf. on Information and Knowledge Management*, pages 1341 – 1342, 2008. (Poster paper).

[E98] Qiang Wang, Khuzaima Daudjee, and M. Tamer Özsu. Popularity-aware prefetch in P2P range caching. In *Proc. 8th IEEE Int. Conf. on Peer-to-Peer Computing*, pages 53–62, 2008.

[E97] Weihan Wang, Shimin Guo, Mohamed A. Sharaf, and M. Tamer Özsu. Potential-driven load distribution for distributed data stream processing. In *Proc. 2nd Int. Workshop on Scalable Stream Processing Systems*, pages 13 – 22, 2008.

[E96] Nan Tang, J.X. Yu, M.T. Ozsu, Byron Choi, and Kam-Fai Wong. Multiple materialized view selection for xpath query rewriting. In *Proc. 24th IEEE Int. Conf. on Data Engineering*, pages 873 –882, 2008.

[E95] Nan Tang, J.X. Yu, M.T. Ozsu, and Kam-Fai Wong. Hierarchical indexing approach to support xpath queries. In *Proc. 24th IEEE Int. Conf. on Data Engineering*, pages 1510 –1512, 2008.

[E94] Qiang Wang and M. Tamer Özsu. An efficient Eigenvalue-based P2P XML routing framework. In *Proc. 7th IEEE Int. Conf. on Peer-to-Peer Computing*, pages 105–112, 2007.

[E93] Xiaoyan Yang, Hock Beng Lim, M. Tamer Özsu, and Kian Lee Tan. In-network execution of monitoring queries in sensor networks. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 521–532, 2007.

[E92] Carsten Binnig, Donald Kossmann, Eric Lo, and M. Tamer Özsu. QAGen: Generating query-aware test databases. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 341–352, 2007.

[E91] Bo Chen, Tok Wang Lin, M. Tamer Özsu, and Zhenzhou Zhu. On label stream partition for efficient holistic twig join. In *Proc. 12th Int. Conf. on Database Systems for Advanced Applications*, pages 807–818, 2007.

[E90] Christian Plattner, Gustavo Alonso, and M. Tamer Özsu. DBFarm: A scalable cluster for multiple databases. In *Proc. ACM/IFIP/USENIX 7th Int. Middleware Conf.*, pages 180–200, 2006.

[E89] Lukasz Golab, Kumar Gaurav Bijay, and M. Tamer Özsu. Multi-query optimization of sliding window aggregates by schedule synchronization. In *Proc. 15th ACM Int. Conf. on Information and Knowledge Management*, pages 844–845, 2006.

[E88] Ning Zhang, M. Tamer Özsu, Ihab F. Ilyas, and Ashraf Aboulnaga. FIX: feature-based indexing technique for XML documents. In *Proc. 32nd Int. Conf. on Very Large Data Bases*, pages 259–270, 2006.

[E87] Lei Chen, Şule Gündüz-Öğüdücü, and M. Tamer Özsu. Mixed type audio classification with support vector machine. In *Proc. IEEE Int. Conf. on Multimedia and Expo*, pages 781–784, 2006.

[E86] Lukasz Golab, Piyush Prahladka, and M. Tamer Özsu. Indexing time-evolving data with variable lifetimes. In *Proc. 18th Int. Conf. on Scientific and Statistical Database Management*, pages 265–274, 2006.

[E85] Derek Phillips, Ning Zhang, Ihab F. Ilyas, and M. Tamer Özsu. InterJoin: Exploiting indexes and materialized views in XPath evaluation. In *Proc. 18th Int. Conf. on Scientific and Statistical Database Management*, pages 13–22, 2006.

[E84] Qiang Wang and M. Tamer Özsu. An XML routing synopsis for unstructured P2P networks. In *Proc. 7th Int. Conf. on Web-Age Information Management Workshops*, pages 176–183, 2006.

[E83] Ning Zhang, M. Tamer Özsu, Ashraf Aboulnaga, and Ihab F. Ilyas. XSEED: Accurate and fast cardinality estimation for XPath queries. In *Proc. 22nd IEEE Int. Conf. on Data Engineering*, page 61, 2006.

[E82] Lukasz Golab, Kumar Gaurav Bijay, and M. Tamer Özsu. On concurrency control in sliding window queries over data streams. In *Advances in Database Technology, Proc. 10th Int. Conf. on Extending Database Technology*, pages 608–626, 2006.

[E81] Jie Lian, Lei Chen, Kshirasagar Naik, M. Tamer Özsu, and Gordon B. Agnew. Localized routing trees for query processing in sensor networks. In *Proc. 14th ACM Int. Conf. on Information and Knowledge Management*, pages 259–260, 2005.

[E80] Lei Chen, M. Tamer Özsu, and Vincent Oria. Using multi-scale histograms to answer pattern existence and shape match queries. In *Proc. 17th Int. Conf. on Scientific and Statistical Database Management*, pages 217–226, 2005.

[E79] Lei Chen, M. Tamer Özsu, and Vincent Oria. Robust and fast similarity search for moving object trajectories. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 491–502, 2005. (Winner of Test of Time Award at SIGMOD 2015).

[E78] Lukasz Golab and M. Tamer Özsu. Update-pattern-aware modeling and processing of continuous queries. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 658–669, 2005.

[E77] Ning Zhang, Shishir Agrawal, and M. Tamer Özsu. BlossomTree: Evaluating XPaths in FLWOR expressions. In *Proc. 21st IEEE Int. Conf. on Data Engineering*, pages 388–389, 2005

[E76] Lei Chen, M. Tamer Özsu, and Vincent Oria. Symbolic representation and retrieval of moving object trajectories. In *Proc. 6th ACM SIGMM Int. Workshop on Multimedia Information Retrieval*, pages 227–234, 2004.

[E75] Ilaria Bartolini, Paolo Ciaccia, Vincent Oria, and M. Tamer Özsu. Integrating the results of multimedia sub-queries using qualitative preferences. In *Proc. Int. Workshop on Multimedia Information Systems*, pages 66–75, 2004.

[E74] Lukasz Golab, Shaveen Garg, and M. Tamer Özsu. On indexing sliding windows over online data streams. In *Advances in Database Technology, Proc. 9th Int. Conf. on Extending Database Technology*, pages 712–729, 2004.

[E73] Ning Zhang, Varun Kacholia, and M. Tamer Özsu. A succinct physical storage scheme for efficient evaluation of path queries in XML. In *Proc. 20th IEEE Int. Conf. on Data Engineering*, pages 54–65, 2004.

[E72] Benjamin Bin Yao, M. Tamer Özsu, and Nitin Khandelwal. XBench benchmark and performance testing of XML DBMSs. In *Proc. 20th IEEE Int. Conf. on Data Engineering*, pages 621–633, 2004.

[E71] Lei Chen and M. Tamer Özsu. Multi-scale histograms for answering queries over time series data. In *Proc. 20th IEEE Int. Conf. on Data Engineering*, page 838, 2004

[E70] Lukasz Golab and M. Tamer Özsu. Processing sliding window multi-joins in continuous queries over data streams. In *Proc. 29th Int. Conf. on Very Large Data Bases*, pages 500–511, 2003.

[E69] Şule Gündüz and M. Tamer Özsu. A poisson model for user accesses to web pages. In *Proc. 18th Int. Symp. on Computer and Information Science*, pages 332–339, 2003.

[E68] Esther Pacitti, M. Tamer Özsu, and Cédric Coulon. Preventive multi-master replication in a cluster of autonomous databases. In *Proc. 9th Int. Euro-Par Conf.*, pages 318–327, 2003.

[E67] Şule Gündüz and M. Tamer Özsu. A user interest model for web page navigation. In *Proc. Int. Workshop on Data Mining for Actionable Knowledge*, pages 46–57, 2003.

[E66] David DeHaan, David Toman, Mariano P. Consens, and M. Tamer Özsu. A comprehensive XQuery to SQL translation using dynamic interval encoding. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, pages 623–634, 2003.

[E65] Şule Gündüz and M. Tamer Özsu. A Web page prediction model based on click-stream tree representation of user behavior. In *Proc. 9th ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining*, pages 535–540, 2003.

[E64] Lei Chen, Sharig .J. Rizvi, and M. Tamer Özsu. Incorporating audio cues into dialog and action scene extraction. In *Proc. SPIE Conf. on Storage and Retrieval for Media Databases*, pages 252–264, 2003.

[E63] Lei Chen, M. Tamer Özsu, and Vincent Oria. Modeling video data for content based queries: Extending the DISIMA image data model. In *Proc. 9th Int. Conf. on Multimedia Modeling*, pages 169–189, 2003.

[E62] Sunny K. S. Lam and M. Tamer Özsu. Querying web data - the WebQA approach. In *Proc. 3rd Int. Conf. on Web Information Systems Eng.*, pages 139–148, 2002.

[E61] Lei Chen, Vincent Oria, and M. Tamer Özsu. A multi-level index structure for video databases. In *Proc. Int. Workshop on Multimedia Information Systems*, pages 28–37, 2002.

[E60] Lei Chen and M. Tamer Özsu. Rule-based scene extraction from video. In *Proc. IEEE Int. Conf. on Image Processing*, pages 737–740, 2002.

[E59] Lei Chen and M. Tamer Özsu. Modeling of video objects in a video database. In *Proc. IEEE Int. Conf. on Multimedia and Expo*, pages 217–221, 2002.

[E58] Vincent Oria, M. Tamer Özsu, and Paul Iglinski. Querying images in the DISIMA DBMS. In *Proc. Int. Workshop on Multimedia Information Systems*, pages 89–98, 2001.

[E57] Vincent Oria, M. Tamer Özsu, Shu Lin, and Paul Iglinski. Similarity queries in the DISIMA image DBMS. In *Proc. 9th ACM Int. Conf. on Multimedia*, pages 475–478, 2001.

[E56] Shu Lin, M. Tamer Özsu, Vincent Oria, and Raymond T. Ng. An extendible hash for multi-precision similarity querying of image databases. In *Proc. 27th Int. Conf. on Very Large Data Bases*, pages 221–230, 2001.

[E55] Silvia Hollfelder, Vincent Oria, and M. Tamer Özsu. Mining user behavior for resource prediction in interactive electronic malls. In *Proc. IEEE Int. Conf. on Multimedia and Expo*, pages 863–866, 2000.

[E54] Vincent Oria, M. Tamer Özsu, L. Irene Cheng, Paul Iglinski, and Yuri Leontiev. Modeling and querying shapes in an image database system. In *Proc. Int. Workshop on Multimedia Information Systems*, pages 34–40, 1999.

[E53] Kaladhar Voruganti, M. Tamer Özsu, and Ronald C. Unrau. An adaptive hybrid server architecture for client caching ODBMSs. In *Proc. 25th Int. Conf. on Very Large Data Bases*, pages 150–161, 1999.

[E52] Ling-Ling Yan and M. Tamer Özsu. Conflict tolerant queries in AURORA. In *Proc. Int. Conf. on Cooperative Inf. Syst.*, pages 279–290, 1999.

[E51] Vincent Oria, M. Tamer Özsu, Bing Xu, L. Irene Cheng, and Paul Iglinski. VisualMOQL: the DISIMA visual query language. In *Proc. Int. Conf. on Multimedia Computing and Systems*, pages 536–542, 1999.

[E50] Youping Niu, M. Tamer Özsu, and Xiaobo Li. 2-D-S Tree: An index structure for content-based retrieval of images. In *Proc. SPIE Conf. on Multimedia Computing and Networking*, pages 110–121, 1999.

[E49] Vincent Oria, M. Tamer Özsu, Duane Szafron, and Paul Iglinski. Defining views in an image database system. In *Proc. 8th IFIP 2.6 Working Conf. on Data Semantics: Semantics Issues in Multimedia*, pages 231–250, 1999.

[E48] Iqbal A. Goralwalla, Yuri Leontiev, M. Tamer Özsu, Duane Szafron, and Carlo Combi. Temporal granularity for unanchored temporal data. In *Proc. 7th Int. Conf. on Information and Knowledge Management*, pages 414–423, 1998.

[E47] M. T. Özsu, K. Voruganti, and R. Unrau. An asynchronous avoidance-based cache consistency algorithm for client caching dbmss. In *Proc. 24th Int. Conf. on Very Large Data Bases*, pages 440–451, 1998.

[E46] Vincent Oria, Bing Xu, and M. Tamer Özsu. VisualMOQL: A visual query lanaguage for image databases. In *Proc. IFIP TC2/WG 2.6 Fourth Working Conference on Visual Database Systems*, pages 186–191, 1998.

[E45] Yuri Leontiev, M. Tamer Özsu, and Duane Szafron. On separation between interface, implementation, and representation in object dbmss. In *Proc. Int. Conf. on Technology of Object-Oriented Languages and Systems*, pages 155–167, 1998.

[E44] Heiko Thimm and M. Tamer Özsu. A generic scheme and sample implementation architecture for graceful service adaptation in multimedia database systems. In *Proc. Int. Conf. on Multimedia Computing and Systems*, pages 241–244, 1998.

[E43] Klemens Böhm, Karl Aberer, M. Tamer Özsu, and Kathrin Gayer. Query optimization for structured documents based on knowledge on the document type definition. In *Proc. IEEE Forum on Res. and Tech. Advances in Digital Libraries*, pages 196–205, 1998.

[E42] John Z. Li, M. Tamer Özsu, and Duane Szafron. Point-set topological relations processing in image databases. In *Proc. of the 1st Int. Forum on Multimedia & Image Processing*, pages 54.1—54.6, 1998.

[E41] Iqbal A. Goralwalla, Yuri Leontiev, M. Tamer Özsu, and Duane Szafron. Modeling temporal primitives: Back to basics. In *Proc. 6th Int. Conf. on Information and Knowledge Management*, pages 24–31, 1997.

[E40] Vincent Oria, M. Tamer Özsu, Xiaobo Li, Ling Liu, and Paul Iglinski. Modeling image for content-based queries: The DISIMA approach. In *Proc. 2nd Int. Conf. on Visual Information Systems*, pages 339 – 346, 1997.

[E39] M. Tamer Özsu, Paul Iglinski, Duane Szafron, Sherine El-Medani, and Manuela Junghanns. An object-oriented SGML/HyTime compliant multimedia database management system. In *Proc. 5th ACM Int. Conf. on Multimedia*, pages 239–249, 1997.

[E38] Iqbal A. Goralwalla, Duane Szafron, M. Tamer Özsu, and Randal J. Peters. Managing schema evolution using a temporal object model. In *Proc. 16th Int. Conf. on Conceptual Modeling*, pages 71–84, 1997.

[E37] Youping Niu, M. Tamer Özsu, and Xiaobo Li. 2D-h trees: An index scheme for content-based retrieval of images in multimedia systems. In *Proc. IEEE Int. Conf. on Intelligent Systems*, pages 1710–1715, 1997.

[E36] John Z. Li, M. Tamer Özsu, and Duane Szafron. MOQL: An object-oriented multimedia query language. In *Proc. Int. Workshop on Multimedia Information Systems*, pages 19–28, 1997.

[E35] M. Tamer Özsu, Iqbal A. Goralwalla, and Duane Szafron. A framework for temporal data models: Exploiting object-oriented technology. In *Proc. Int. Conf. on Technology of Object-Oriented Languages and Systems*, pages 16–30, 1997.

[E34] Ling-Ling Yan, M. Tamer Özsu, and Ling Liu. Mediator join indices. In *Proc. 7th Int. Workshop on Research Issues on Data Eng.*, pages 51–59, 1997.

[E33] John Z. Li, M. Tamer Özsu, and Duane Szafron. Modeling of moving objects in a video database. In *Proc. Int. Conf. on Multimedia Computing and Systems*, pages 336–343, 1997.

[E32] Ling-Ling Yan, M. Tamer Özsu, and Ling Liu. Accessing heterogeneous data through homogenization and integration mediators. In *Proc. Int. Conf. on Cooperative Inf. Syst.*, pages 130–139, 1997.

[E31] John Z. Li, M. Tamer Özsu, and Duane Szafron. Modeling video temporal relationships in an object database management system. In *Proc. Multimedia Computing and Networking*, pages 80–91, 1997.

[E30] John Z. Li, M. Tamer Özsu, and Duane Szafron. Spatial reasoning rules in multimedia management system. In *Proc. 3rd Int. Conf. on Multimedia Modeling*, pages 119–133, 1996.

[E29] John Z. Li, M. Tamer Özsu, and Duane Szafron. Modeling of video spatial relationships in an object database management system. In *Proc. Int. Workshop on Multimedia Database Management Systems*, pages 124–132, 1996.

[E28] M. Tamer Özsu, Adriana Muñoz, and Duane Szafron. An extensible query optimizer for an objectbase management system. In *Proc. 4th Int. Conf. on Information and Knowledge Management*, pages 188–196, 1995.

[E27] Iqbal A. Goralwalla, Abdullah Uz Tansel, and M. Tamer Özsu. Experimenting with temporal relational databases. In *Proc. 4th Int. Conf. on Information and Knowledge Management*, pages 296–303, 1995.

[E26] Randal J. Peters and M. Tamer Özsu. Axiomatization of dynamic schema evolution in objectbases. In *Proc. 11th IEEE Int. Conf. on Data Engineering*, pages 156–164, 1995.

[E25] R.J. Peters and M. Tamer Özsu. Reflection in a uniform behavioral object model. In *Proc. 12th Int. Conf. on Entity-Relationship Approach*, pages 37–49, ember 1993.

[E24] Iqbal Goralwalla and M. Tamer Özsu. Temporal extensions to a uniform behavioral object model. In *Proc. 12th Int. Conf. on Entity-Relationship Approach*, pages 115–127, ember 1993.

[E23] R.J. Peters, A. Lipka, M. Tamer Özsu, and Duane Szafron. An extensible query model and its languages for a uniform behavioral object management system. In *Proc. 2nd Int. Conf. on Information and Knowledge Management*, pages 403–412, November 1993.

[E22] John Shillington and M. Tamer Özsu. Semipermeable transaction and sementics-based concurrency control for multidatabases. In *Proc. 3rd Int. Workshop on Research Issues on Data Eng.*, pages 245–248, 1993.

[E21] M. Tamer Özsu, Randal J. Peters, Boman Irani, Anna Lipka, Adriana Muñoz, and Duane Szafron. Tigukat object management system: initial design and current directions. In *Proc. Conf. of the IBM Centre for Advanced Studies on Collaborative Research*, pages 595–611, 1993.

[E20] M. Tamer Özsu and Y. Niu. Effects of network protocols on distributed concurrency control performance. In *Proc. Int. Conf. Computing and Inf.*, pages 274–279, 1992.

[E19] Dave D. Straube and M. Tamer Özsu. Execution plan generation for an object-oriented data model. In *Proc. 2nd Int. Conf. on Deductive and Object-Oriented Databases*, pages 43–67, 1991.

[E18] Ken Barker and M. Tamer Özsu. Reliable transaction execution in multidatabase systems. In *Proc. 1st Int. Workshop on Interoperability in Multidatabase Systems*, pages 344–347, April 1991.

[E17] Dave D. Straube and M. Tamer Özsu. Type consistency of queries in an object-oriented database system. In *Proc. 1990 Conf. on Object Oriented Programming Systems Languages and Applications/European Conf. on Object-Oriented Programming*, pages 224–233, 1990.

[E16] Dave D. Straube and M. Tamer Özsu. A model for OODB queries. In *Proc. Object-Oriented Database Task Group Workshop, NIST Technical Report NISTIR 4503*, pages 126–135, 1990.

[E15] Ken Barker and M. Tamer Özsu. Concurrent transaction execution in multidatabase systems. In *Proc. COMPSAC90 – The 14th. Annual Int. Computer Software and Applications Conference*, pages 224–233, 1990.

[E14] M. Tamer Özsu and Ken Barker. Architectural classification and transaction execution models of multidatabase systems. In *Proc. Int. Conf. Computing and Inf.*, pages 275–279, 1990.

[E13] Kok-Lung Wong and M. Tamer Özsu. Distributed simulation of performance Petri Nets. In *Proc. Summer Computer Simulation Conf.*, pages 141–146, 1990.

[E12] M. Tamer Özsu. Architectural models for distributed database operating systems. In *Computing and Inf.*, pages 343–349, 1989.

[E11] Tse-Men Koon and M. Tamer Özsu. Evaluation of reliability mechanisms in distributed database systems. In *Proc. CIPS (Canadian Information Processing Society) Edmonton '87 Conf.*, pages 246–255, 1987.

[E10] M. Tamer Özsu. Distributed simulation using petri nets. In *Proc. Summer Computer Simulation Conference*, pages 3–8, 1987.

[E9] Tse-Men Koon and M. Tamer Özsu. Performance comparison of resilient concurrency control algorithms for distributed databases. In *Proc. 2nd IEEE Int. Conf. on Data Engineering*, pages 565–573, 1986.

[E8] Abdel A. Farrag and M. Tamer Özsu. A general concurrency control for database systems. In *Proc. National Computer Conf.*, pages 567–573, 1985.

[E7] M. T. Özsu. Performance comparison of distributed vs centralized locking algorithms in distributed database systems. In *Proc. 5th IEEE Int. Conf. on Distributed Computing Systems*, pages 254–261, 1985.

[E6] M. Tamer Ozsu. A net simulator as a performance evaluation tool for distributed database systems'. In *Proc. Convention Informatique*, volume Vol. A, pages 154–159, 1984.

[E5] T. Özsu. An introduction to distributed databases. In *Proc. 2nd UNESCO Regional Seminar on Microprocessors/Microcomputers and Distributed Computer Systems*, pages 304–319, 1982.

[E4] M. Tamer Ozsu and B.W. Weide. Modeling of distributed database concurrency control mechanisms using an extended Petri net formalism. In *Proc. 3rd IEEE Int. Conf. on Distributed Computing Systems*, pages 660–665, 1982.

[E3] M. Tamer Özsu and Esen A. Özkarahan. SYNGLISH - A high-level query language for the RAP database machine. In *Proc. Fifth Workshop on Computer Architecture for Non-Numeric Processing*, pages 139–150, 1980.

[E2] M. Tamer Özsu, Esen A. Özkarahan, and Behcet Sarikaya. High level query language for database machines. In *Proc. 2nd National Information Processing Conf.*, pages 81–89, 1978. (in Turkish).

[E1] M. Tamer Özsu. Management information systems and database systems. In *Proc. 6th National Scientific Congress*, pages 407–422, 1977. (in Turkish).

◇ **Invited Publications:**

[F14] M. Tamer Özsu. A systematic view of data science. *IEEE Data Eng. Bull.*, 43(3):3–11, 2020.

[F13] M. Tamer Özsu. A survey of RDF data management systems. *Front. Comput. Sci.*, 10(3):418–432, 2016.

[F12] Şule Gündüz and M. Tamer Özsu. Recommendation models for user accesses to web pages. In *Proc. Joint Int. Conf. on Artificial Neural Networks and Neural Information Processing*, pages 1003–1010, 2003 (Text of invited talk.)

[F11] Benjamin Bin Yao, M. Tamer Özsu, and John Keenleyside. XBench - A family of benchmarks for XML DBMSs. In *Efficiency and Effectiveness of XML Tools and Techniques and Data Integration over the Web — Proc. of VLDB Workshops EEXTT and DiWeb*, Lecture Notes in Computer Science 2590, pages 162–164, 2002.

[F10] M. Tamer Özsu. Database support for document and multimedia databases. In *Proc. Datenbanksysteme in Büro, Technik und Wissenschaft* (BTW), page 3, 2001 (Abstract of keynote address.)

[F9] 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.)

[F8] M. Tamer Özsu. Flexible data integration on the internet: Current trends and issues. In *Proc. Workshop on Information Integration on the Web*, page 1, 2001 (Abstract of keynote address.)

[F7] M. Tamer Özsu, Hans-Jörg Schek, Katsumi Tanaka, and Yanchun Zhang. Special issue on the 2nd web information systems engineering conference (WISE'01). *World Wide Web J.*, 4(3):147–149, 2001.

[F6] M. Tamer Özsu. Issues in multimedia data management. In *Proc. 3rd Int. Conf. on Database Eng. and Applications*, pages 452–459, 1999 (Text of keynote address.)

[F5] M. Tamer Özsu. Future of database systems: Changing applications and technological developments. *ACM Comput. Surv.*, 28(4es):article 85, 1996.

[F4] M. Tamer Özsu. Changing infrastructure - new demands on distributed data management. In *Proc. 4th Int. Conf. on Computer Communications and Networks*, 1995 (Abstract of keynote address.)

[F3] M. Tamer Özsu. Query processing issues in object-oriented database systems – Preliminary ideas. In *Proc. 1991 ACM Symp. on Applied Computing*, pages 312–324, 1991.

[F2] M. Tamer Özsu. From data management to knowledge management – Prospects for the next decade (invited paper). In *Proc. of CIPS National Congress*, pages 118–124, 1989.

[F1] M. Tamer Özsu. Distributed database systems – a cause for chaos or a vehicle for order. In *Proc. CIPS Edmonton '88 Conf.*, pages 111–120, 1988.

◇ **Other Papers:**

[G6] Yue Pang, Linglin Yang, Lei Zou, and M. Tamer Özsu. gFOV: A full-stack SPARQL query optimizer & plan visualizer. In *Proc. 32nd ACM Int. Conf. on Information and Knowledge Management*, pages 5081–5085, New York, NY, USA, 2023. Association for Computing Machinery. System demonstration paper.

[G5] Zhengxin Zhang, Qing Li, Guanglin Duan, Dan Zhao, Jingyu Xiao, Guorui Xie, and Yong Jiang. Pontus: Finding waves in data streams. *Proc. ACM Manag. Data*, 1(1), 2023. Tutorial paper.

[G4] X. Shen, L. Zou, M. T. Özsu, L. Chen, Y. Li, S. Han, and D. Zhao. A graph-based RDF triple store. In *Proc. 31st IEEE Int. Conf. on Data Engineering*, pages 1508–1511, 2015. System demonstration paper.

[G3] O. Hartig and M. T. Özsu. Linked data query processing. In *Proc. 30th IEEE Int. Conf. on Data Engineering*, pages 1286–1289, 2014. Tutorial paper.

[G2] Vincent Oria, M. Tamer Özsu, Paul Iglinski, Bing Xu, and L. Irene Cheng. DISIMA: An object-oriented approach to developing an image database system. In *Proc. 16th IEEE Int. Conf. on Data Engineering*, pages 672–673, 2000. System demonstration paper.

[G1] Vincent Oria, M. Tamer Özsu, Paul Iglinski, Shu Lin, and Benjamin Bin Yao. DISIMA: A distributed and interoperable image database system. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, page 600, 2000. System demonstration paper.

◇ **Unrefereed Publications:**

[H17] Philip A. Bernstein, David J. DeWitt, Andreas Heuer, Zachary G. Ives, Christian S. Jensen, Holger Meyer, M. Tamer Özsu, Richard T. Snodgrass, Kyu-Young Whang, and Jennifer Widom. Database publication practices. In *Proc. 31st Int. Conf. on Very Large Data Bases*, pages 1241–1246, 2005.

[H16] Philip A. Bernstein, Elisa Bertino, Andreas Heuer, Christian S. Jensen, Holger Meyer, M. Tamer Özsu, Richard T. Snodgrass, and Kyu-Young Whang. An apples-to-apples comparison of two database journals. *ACM SIGMOD Rec.*, 34(4):61–64, 2005.

[H15] M. Tamer Özsu, Jean Carrive, Sébastien Gilles, Izabela Grasland, Roger Mohr, and Thomas Seidl. CVDB 2004 Panel: Future applications and solutions. In *Proc. First Int. Workshop on Computer Vision meets Databases*, pages 67–68, 2004.

[H14] Michael Gertz, M. Tamer Özsu, Gunter Saake, and Kai-Uwe Sattler. Report on the Dagstuhl seminar: "data quality on the Web". *ACM SIGMOD Rec.*, 33(1):127–132, 2004.

[H13] Zoé Lacroix, M. Tamer Özsu, Joe Wigglesworth, Louiqa Raschid, and Anthony Tomasic. Using standards for data integration over the Web. In *Proc. 2nd Int. Workshop on Data Integration over the Web*, pages 143–145, 2002 (Panel).

[H12] M. Tamer Özsu and Paul Iglinski. An interoperable multimedia catalog system for electronic commerce. *IEEE Data Eng. Bull.*, 23(1):17–22, 2000.

[H11] M. Tamer Özsu. Data management issues in electronic commerce. In *Proc. ACM SIGMOD Int. Conf. on Management of Data*, page 505, 1999 (Panel statement.)

[H10] M. Tamer Özsu and Stavros Christodoulakis. Introduction (special issue on multimedia databases). *VLDB J.*, 7(4):205, 1998.

[H9] M. Tamer Özsu. The push/pull effect - can distributed database technology meet the challenges of new applications? *Database Programming & Design*, April 1997.

[H8] M.T. Özsu and P. Valduriez. Distributed Database Systems: Where Are We Now?. *Database Programming & Design*, March 1992 and April 1992 issues. Originaly appeared in *IEEE Computer*, 24(8): 68–78, August 1991.

[H7] Niki Pissinou, Richard T. Snodgrass, Ramez Elmasri, Inderpal Singh Mumick, M. Tamer Özsu, Barbara Pernici, Arie Segev, Babis Theodoulidis, and Umeshwar Dayal. Towards an infrastructure for temporal databases: Report of an invitational ARPA/NSF workshop. *ACM SIGMOD Rec.*, 23(1):35–51, 1994.

[H6] M. Tamer Özsu, Umeshwar Dayal, and Patrick Valduriez. Workshop report – int. workshop on distributed object management. *ACM SIGMOD Rec.*, 22(1):40–54, 1993.

[H5] M. Tamer Özsu. The promise and reality of distributed database systems. *The Relational Journal*, 5(1), February/March 1993.

[H4] M. Tamer Özsu and Patrick Valduriez. Systèmes de gestion de bases de donnés répartis et parallèles. *Canadian Information Processing/Informatique Canadienne*, July/August 1992.

[H3] M.T. Özsu. Issues in Distributed Database Systems. *Bilisim* (publication of the Information Processing Society of Türkiye), No. 19-20, pages 32–38, March-June 1985.

[H2] M.T. Özsu. The Computer Selection Process and Useful Techniques, *Bilgisayar*, No. 33, pages 32–38, July-August 1983 (in Turkish).

[H1] M.T. Özsu. Use of Computers in Industry. *Bilgisayar*, 1(6): 18–21, 1979 (in Turkish).

◇ **Blogs/Editorials/Reviews:**

[J26] M. Tamer Özsu. ACM Books to launch. *Commun. ACM*, 56(12):5–5, December 2013.

[J25] M. T. Özsu, Computer science publication culture: where to go from here?, *ACM SIGMOD Blog*, 17 July 2012. Available at http://wp.sigmod.org/?p=488.

[J24] M. Tamer Özsu. Editorial. *VLDB J.*, 14(1):1, 2005.

[J23] M. Tamer Özsu, Donald Kossmann, and Renée J. Miller. Special issue: Best papers of vldb 2004. *VLDB J.*, 14(4):355–356, 2005.

[J22] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 33(1):4, 2004.

[J21] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 33(3):4–5, 2004.

[J20] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 33(4):7, 2004.

[J19] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 32(2):4, 2003.

[J18] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 32(3):4, 2003.

[J17] M. Tamer Özsu. New partnership with ACM and update on the journal. *VLDB J.*, 12(1):1, 2003.

[J16] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 31(2):3–4, 2002.

[J15] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 31(3):3–4, 2002.

[J14] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 31(4):3–4, 2002.

[J13] Qing Li and M. Tamer Özsu. Editorial: Introduction to web media information systems. *World Wide Web J.*, 5(2):179–180, 2002.

[J12] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 30(3):4–5, 2001.

[J11] M. Tamer Özsu. Chair's message. *ACM SIGMOD Rec.*, 30(4):3, 2001.

[J10] Elisa Bertino and M. Tamer Özsu. Guest editors' introduction. *Distrib. Parall. Databases*, 2(1):5–6, 1994.

[J9] M.T. Özsu. Review of 'Providing high availability using lazy replication' by R. Ladin, B. Liskov, L. Shrira and S. Ghemawat. *Computing Reviews*, February 1994.

[J8] M.T. Özsu. Review of 'Cost and availability tradeoffs in replicated data concurrency control' by A. Kumar and A. Segev. *Computing Reviews*, August 1994.

[J7] M.T. Özsu. Review of 'Rule-based optimization and query processing in an extensible geometric database system' by L. Becker and R.H. Güting. *Computing Reviews*, December 1993.

[J6] M.T. Özsu and L.Y. Yuan. Review of 'A correction of the termination conditions of the HensChen-Naqvi technique' by D.A. Briggs. *Computing Reviews*, September 1992, p. 519.

[J5] M.T. Özsu and W. Davis. Guest Editorial. *INFOR*, 26(4): 231–233, November 1988.

[J4] M.T. Özsu and W. Davis. Guest Editorial. *INFOR*, 27(2): 127–128, May 1989.

[J3] M.T. Özsu. Issues in Distributed Databases. (Session Coordinator. Introduction), In *Proc. 20th Annual Hawaii Int. Conf. on System Sciences*, Kona, Hawaii, January 1987, pages 405–406.

[J2] M.T. Özsu. Issues in Distributed Databases. (Session Coordinator. Introduction), In *Proc. 19th Annual Hawaii Int. Conf. on System Sciences*, Honolulu, Hawaii, January 1986, pages 619–621.

[J1] M.T. Özsu. Security and Privacy of Records Stored in Computers. *Cumhuriyet Newspaper* Computer Supplement, May 13, 1983 (in Turkish).