

Yousef J. Al-Houmaily, Ph. D.

Professor of Computer Engineering and Information Systems



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EDUCATION

- **Ph.D. in Computer Engineering**, Department of Electrical Engineering, University of Pittsburgh, Pittsburgh, PA, April 1997.
Thesis: Commit Processing in Distributed Database Systems and in Heterogeneous Multidatabase Systems. (Supervisors: Panos K. Chrysanthis & Steven P. Levitan)
- **M.S. in Computer Science**, Department of Computer Science, George Washington University, Washington D.C., September 1990.
- **B.S. in Computer and Information Sciences**, Department of Computer Engineering, College of Computer and Information Sciences, King Saud University, Riyadh, Saudi Arabia, June 1986.

RESEARCH INTERESTS

- Advanced Database Applications
- Big Data
- Business Informatics
- Cloud Computing
- Computing Algorithms
- Data Structures
- Database Systems
- Distributed Systems
- Electronic Government
- Electronic Learning
- Mobility and Database Systems
- Sensor Networks

TEACHING

- CS 448/648 Introduction to Database Management (Graduate Level Course, University of Waterloo, Canada, Academic Year 2005-2006).
- CS 338 Computer Applications in Business: Databases (Undergraduate Level Course, University of Waterloo, Canada, Academic Year 2005-2006).
- Systems' Analysis (5-day training course, Institute of Public Administration). Taught several times.
- Fundamentals of Database Systems (Diploma Level Course, Institute of Public Administration). Taught several times.
- Database Design (5-day training course, Institute of Public Administration). Taught several times.
- SQL (5-day training course, Institute of Public Administration). Taught several times.
- PL/SQL (5-day training course, Institute of Public Administration). Taught several times.
- ACCESS Programming (5-day training course, Institute of Public Administration). Taught several times.
- Software Quality Assurance (5-day training course, Institute of Public Administration). Taught several times.
- Information Security in Computer Systems (3-day seminar, Institute of Public Administration). Taught several times.
- Computer Applications (Diploma Level Course, Institute of Public Administration). Taught several times.

APPOINTMENTS

- **Professor and Faculty member**, Department of Computer and Information Programs, Institute of Public Administration. June 15, 2016 until present time.
- **Associate Professor and Faculty member**, Department of Computer and Information Programs, Institute of Public Administration. November 28, 2007 until June 14, 2016.
- **Assistant Professor and Faculty member**, Department of Computer and Information Programs, Institute of Public Administration. July 1st, 2006 until November 27, 2007.
- **Visiting Assistant Professor**, David R. Cheriton School of Computer Science, University of Waterloo, Canada. July 2, 2005 until June 30, 2006.
- **Assistant Professor and Faculty member**, Department of Computer and Information Programs, Institute of Public Administration. August 29, 2003 until July 1, 2005.
- **Full Time consultant at the office of the Deputy Prime Minister**. July 1st, 2003 until August 28, 2003.
- **Assistant Professor and Faculty member**, Department of Computer and Information Programs, Institute of Public Administration. March 23, 2003 until June 30, 2003.
- **Full-time Member of the General Commission for the Ministerial Committee for Administrative Organization**. June 2002 until March 2003.
- **Assistant Professor and Director**, Department of Computer and Information Programs, Institute of Public Administration. November 1997 until June 2002.
- **Research Assistant**, Department of Computer Science, University of Pittsburgh, Pittsburgh, Pennsylvania. September 1995 until April 1997.

- **Lecturer and Computer Operations Supervisor**, Institute of Public Administration. September 1990 until August 1991.
- **Assistant Lecturer**, Institute of Public Administration. May 1986 until August 1988.

IMPORTANT ADMINISTRATIVE AND TECHNICAL COMMITTEES

- Member of the Committee Evaluating Microsoft's Proposal to the Saudi Arabian Government, (a committee formed by HRH Abdulaha bin Abdulaziz Al-Saud), from November 6, 1999 until May 14, 2001.
- Member of the Educational Staff Recruitment Committee (for two years starting August 19, 2001).
- Member of the Academic Council in the Institute of Public Administration (first term: From November 20, 2001 until October 30, 2003).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (first term: from February 10, 2002 until October 30, 2003).
- Program Chairman, Symposium of Computer Utilization and obstacles facing its use in the government sector: Institute of Public Administration, March 23, 2003.
- Member of the Academic Council in the Institute of Public Administration (second term: From December 31, 2003 until December 9, 2005).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (second term: From January 11, 2004 until December 9, 2005).
- Member of the Permanent Committee for Information and Technology (from February 5, 2007 until January 20, 2010).
- Team Leader, Developing the Information and Electronic Government Transactions' Strategy Plan in the Institute of Public Administration (for a period of a month and a half starting May 4, 2007).
- Member of the Academic Council in the Institute of Public Administration (third term: From May 6, 2008 until April 14, 2010).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (third term: From October 14, 2008 until April 14, 2010).
- Member of the Academic Council in the Institute of Public Administration (fourth term: From June 21, 2011 until May 28, 2013).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (fourth term: From August 17, 2011 until May 28, 2013).
- Member of the Academic Council in the Institute of Public Administration (fifth term: From November 13, 2016 until August 25, 2017).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (fifth term: From November 27, 2016 until August 25, 2017).
- Member of the Academic Council in the Institute of Public Administration (sixth term: From April 4, 2019 until November 26, 2019).
- Member of the Permanent Academic Promotion Committee: a subcommittee formed by the Academic Council (sixth term: From April 11, 2019 until November 26, 2019).
- Member of the Permanent Faculty Disciplinary Committee, From June 11, 2018 until present time.
- Member of the Permanent Faculty Disciplinary Violations Evaluation Committee, From September 9, 2019 until present time.
- Member of the Technical Program Committee of the "Conference on Administrative Development in Light of Saudi Vision 2030," Riyadh, Saudi Arabia, March 2019.

CONSULTATIONS

- **Part-time consultant:** General Presidency for Girls Education and HRH Abdulaha bin Abdulaziz Al-Saud's Project for Computers in Education (WATANI). April 2001 until June 2002.
- **Part-time consultant:** Control and Investigation Board. March 2002 until February 2005.
- **Computerizing the archiving and administration of international treaties:** A consultation to the Ministry of Transportation. February 2, 2008 until June 30, 2008.
- **Establishing and planning the information technology infrastructure:** A consultation to the College of Command and Staff, Ministry of Defense. December 28, 2003 until May 9, 2005.
- **Establishing a Computer Center and Applying Information Technology in the office of the Deputy Prime Minister,** a Consultation to the Office of the Deputy Prime Minister. June 2, 2003 until October 7, 2003.
- **Introducing Computer Services and Interconnecting the Branches of the Control and Investigation Board,** a Consultation to the Control and Investigation Board. January 2, 2001 until January 8, 2002.
- **Introducing Computer Services and Interconnecting the Police Stations in the Riyadh Region,** a Consultation to the Riyadh Police Department. From March 1998 until July 1999.

PUBLICATIONS

Books

- **Design and Application of Relational Database Systems,** Yousef J. Al-Houmaily, Research Center, Institute of Public Administration, Riyadh, Saudi Arabia, 2008.
- **Computer Utilization in the Government Sector in Saudi Arabia: Obstacles and Solutions,** (Field Research Study written in Arabic), Research Center, Institute of Public Administration, Riyadh, Saudi Arabia, 2005.

Journals

- **Extending the Intelligent Adaptive Participant's Presumption Protocol to the Multi-Level Distributed Transaction Execution Model,** Yousef J. Al-Houmaily, *International Journal of Database Management Systems*, Vol. 7, No. 6, pp. 29-48, December 2015.
- **GLAP: A Global Loopback Anomaly Prevention Mechanism for Multi-Level Distributed Transactions,** Yousef J. Al-Houmaily, *International Journal of Database Management Systems*, Vol. 6, No. 3, pp. 85-97, June 2014.
- **On Deferred Constraints in Distributed Database Systems,** Yousef J. Al-Houmaily, *International Journal of Database Management Systems*, Vol. 5, No. 6, pp. 1-16, December 2013.
- **An Intelligent Adaptive Participant's Presumption Protocol for Atomic Commitment in Distributed Databases,** Yousef J. AL-Houmaily, *International Journal of Intelligent Information and Database Systems*, Vol. 7, No. 3, pp. 242-277, 2013.
- **Atomic Commit Protocols, their Integration, and their Optimisations in Distributed Database Systems,** Yousef J. AL-Houmaily, *International Journal of Intelligent Information and Database Systems*, Vol. 4, No. 4, pp. 373-412, 2010.
- **Schemes for Atomicity in Heterogeneous Database Environments,** Yousef J. AL-Houmaily, *Applied Computing & Informatics - The Saudi Computer Journal*, Vol. 7, No. 2, pp. 31-62, 2009.

- **Incompatibility Dimensions and Integration of Atomic Commit Protocols**, Yousef J. Al-Houmaily, *International Arab Journal of Information Technology*, Vol. 5, No. 4, pp. 381-392, October 2008.
- **An Atomic Commit Protocol for Gigabit-Networked Distributed Databases**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, *Journal of Systems Architecture, The EUROMICRO Journal*, Vol. 46, No. 9, pp. 809-833, June 2000.

Book Chapters

- **Two-Phase Commit**, Yousef J. Al-Houmaily and George Samaras. In Encyclopedia of Database Systems, 2nd Edition, *Ling Liu and M. Tamer Özsu, eds.*, Springer, 2018.
- **Three-Phase Commit**, Yousef J. Al-Houmaily and George Samaras. In Encyclopedia of Database Systems, 2nd Edition, *Ling Liu and M. Tamer Özsu, eds.*, Springer, 2018.
- **Two-Phase Commit**, Yousef J. Al-Houmaily and George Samaras. In Encyclopedia of Database Systems, *Ling Liu and M. Tamer Özsu, eds.*, Springer, 2009.
- **Three-Phase Commit**, Yousef J. Al-Houmaily and George Samaras. In Encyclopedia of Database Systems, *Ling Liu and M. Tamer Özsu, eds.*, Springer, 2009.
- **Recovery and Performance of Atomic Commit Processing in Distributed Database Systems**, Panos K. Chrysanthis, George Samaras and Yousef J. Al-Houmaily. In Recovery Mechanisms in Database Systems, *V. Kumar and M. Hsu, eds.*, pp. 370-416, Printice Hall, 1998.

Conferences and Symposia

- **On Interoperating Incompatible Atomic Commit Protocols in Distributed Databases**, Yousef J. Al-Houmaily, In *Proceedings of the 1st IEEE International Conference on Computers, Communications, and Signal Processing*, pp. 149-156, Kuala Lumpur, Malaysia, November 2005.
- **ML-1-2PC: An Adaptive Multi-level Atomic Commit Protocol**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 8th East-Europeran Conference on Advances of Databases and Information Systems*, Lecture Notes on Computer Science (LNCS), Vol. 3255, pp. 275-290, Budapest, Hungary, Sep. 2004.
- **1-2PC: The One-Two Phase Atomic Commit Protocol**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 19th ACM Annual Symposium on Applied Computing, Special Track on Database Theory, Technology, and Applications*, pp. 684-691, Nicosia, Cyprus, March 2004.
- **Atomicity with Incompatible Presumptions**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 18th ACM Symposium on Principles of Database Systems*, pp. 306-315, Philadelphia, Pennsylvania, May 1999.
- **Performance of Five Atomic Commit Protocols in Gigabit-Networked Database Systems**, Y. J. Al-Houmaily, R. Conticello, J. Pike and P. K. Chrysanthis, In *Proceedings of the 11th ISCA International Conference on Parallel and Distributed Computing Systems*, pp. 29-36, Chicago, Illinois, September 1998.
- **Atomicity of Global Transactions in Multidatabase Systems**, Yousef J. Al-Houmaily, In *Proceedings of the Symposium on Computer Networking and Distributed Databases*, pp. 211-221, Riyadh, Saudi Arabia, March 1998.

- **An Argument in Favor of the Presumed Commit Protocol**, Yousef J. Al-Houmaily, Panos K. Chrysanthis and Steven P. Levitan, In *Proceedings of the 13th IEEE International Conference on Data Engineering*, pp. 255-265, Birmingham, U. K., April 1997.
- **Enhancing the Performance of Presumed Commit Protocol**, Yousef J. Al-Houmaily, Panos K. Chrysanthis and Steven P. Levitan, In *Proceedings of the 12th ACM Annual Symposium on Applied Computing, Special Track on Database Technology*, pp. 131-133, San Jose, California, March 1997.
- **In Search for an efficient Real-Time Atomic Commit Protocol**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 17th Real-Time Systems Symposium on Work in Progress*, pp. 51-54, Washington D.C., December 1996.
- **The Implicit Yes-Vote Commit Protocol with Delegation of Commitment**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 9th ISCA International Conference on Parallel and Distributed Computing Systems*, pp. 804-810, Dijon, France, September 1996.
- **Dealing with Incompatible Presumptions of Commit Protocols in Multidatabase Systems**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 11th ACM Annual Symposium on Applied Computing, Special Track on Database Technology*, pp. 186-195, Philadelphia, Pennsylvania, February 1996.
- **Two-Phase Commit in Gigabit-Networked Distributed Databases**, Yousef J. Al-Houmaily and Panos K. Chrysanthis, In *Proceedings of the 8th ISCA International Conference on Parallel and Distributed Computing Systems*, pp. 554-560, Orlando, Florida, September 1995.

Technical Reports

- **Performance of Atomic Commit Protocols in Gigabit-Networked Database Systems**, Yousef J. Al-Houmaily, Robert Conticello and Panos K. Chrysanthis, *CS Technical Report 97-15, University of Pittsburgh*, 1997.

Workshops

- **Commit Processing in Distributed, Heterogeneous and Multidatabase Systems**, Yousef J. Al-Houmaily, Steven P. Levitan and Panos K. Chrysanthis, *Fifth Annual Graduate Research Review, Electrical Engineering Department, University of Pittsburgh*, April 1996.

Awards

- MSc Scholarship from the Institute of Public Administration, 1988.
- PhD Scholarship from the Institute of Public Administration, 1991.
- “One of the Most Active Reviewers for the year 2009,” *Awarded by the International Arab Journal of Information Technology*, Colleges of Computer and Information Society (CCIS), Association of Arab Universities, January 2010.
- “One of the Most Active Reviewers for the year 2016,” *Awarded by the International Arab Journal of Information Technology*, Colleges of Computer and Information Society (CCIS), Association of Arab Universities, January 2017.
- “One of the Most Active Reviewers for the year 2017,” *Awarded by the International Arab Journal of Information Technology*, Colleges of Computer and Information Society (CCIS), Association of Arab Universities, January 2018.

PROFESSIONAL ACTIVITIES

Editorial Board Membership

- **Journal of Public Administration**, Published by the Institute of Public Administration, Riyadh, Saudi Arabia. (first term: From November 3, 2015 until October 21, 2016)
- **Journal of Public Administration**, Published by the Institute of Public Administration, Riyadh, Saudi Arabia. (second term: From November 14, 2016 until November 2, 2017)
- **International Arab Journal of Information Technology**, Published by Zarqa University, Zarqa, Jordan. (From January 1, 2017 till present time)

Program Committee Membership in Conferences

- **1st Int'l Conference on Information Reuse and Integration (IRI'99)**, Atlanta, Georgia, November 1999.
- **Int'l Workshop on Data Engineering for Wireless and Mobile Access** (in Conjunction with the 5th Annual Int'l Conference on Mobile Computing and Networking), Seattle, Washington, August 1999.
- **2nd Int'l Workshop on Mobility in Databases and Distributed Systems (MDDS'99)** (in Conjunction with the 10th Int'l Conference on Database and Expert Systems Applications), Florence, Italy, August 1999.
- **2nd Int'l Conference on Information Reuse and Integration (IRI'2000)**, Honolulu, Hawaii, November 2000.
- **3rd Int'l Conference on Information Reuse and Integration (IRI'2001)**, Las Vegas, Nevada, November 2001.
- **5th Int'l Conference on Information Reuse and Integration (IRI'2003)**, Las Vegas, Nevada, November 2003.
- **8th Int'l Workshop on Mobility in Databases and Distributed Systems (MDDS'05)** (in Conjunction with the 16th Int'l Conference on Database and Expert Systems Applications), Copenhagen, Denmark, August 2005.
- **1st Int'l Conference on Computers, Communications and Signal Processing (CCSP'05)**, Kuala Lumpur, Malaysia, November 2005.
- **4th Int'l Conference on Future Trends in Computing and Communication Technologies**, Beijing, China, December 2013.
- **7th Int'l Conference on Computer Science, Engineering and Applications**, Dubai, UAE, January 2017.
- **8th Int'l Conference on Database Management Systems (DMS 2017)**, Sydney, Australia, February 2017.
- **3rd Int'l Conference on Data Mining and Applications (DMA 2017)**, Geneva, Switzerland, March 2017.
- **The Int'l Conference on Geoinformatics (ICG 2017)**, Guilin, China, August 2017.
- **6th Int'l Conference on Database and Data Mining (DBDM 2018)**, Geneva, Switzerland, March 2018.
- **6th Int'l Conference on Data Mining (DTMN 2020)**, Sydney, Australia, October 2020.
- **4th Int'l Conference on Electrical Engineering (ELEC 2020)**, Dubai, UAE, November 2020.

- **4th Int'l Conference on Electrical & Computer Engineering (E&C 2020)**, Dubai, UAE, December 2020.

Technical Program Committee Membership in Journals

- International Arab Journal of Information Technology (Since October 2007 until 2019).

Referee and Reviewer

Books

- K. Ramamritham and P. K. Chrysanthis, **Advances in Concurrency Control and Transaction Processing**, (Executive Briefing) IEEE Computer Society, July 1996.

Journals

- **Special Issue on Workflow Management Systems**, Distributed Systems Engineering Journal, IEE/BCS, December 1996 (Panos K. Chrysanthis, Editor).
- **ACM Computing Surveys**.
- **ACM Transactions on Internet Technology (TOIT)**.
- **Security Research Journal**, Published by the Research and Studies Center, King Fahad Security College.
- **International Journal of Database Management Systems (IJDMS)**.
- **Herald J. of Education and General Studies**.
- **International Arab Journal of Information Technology**.

Conferences and Workshops

- ACM SIGMOD Int'l Conference on Management of Data (SIGMOD'99).
- 1st Int'l Conference on Information Reuse and Integration (IRI'99).
- Int'l Workshop on Data Engineering for Wireless and Mobile Access (MobiDE'99).
- 2nd Int'l Workshop on Mobility in Databases and Distributed Systems (MDDS'99).
- 2nd Int'l Conference on Information Reuse and Integration (IRI'2000).
- 3rd Int'l Conference on Information Reuse and Integration (IRI'2001).
- 5th Int'l Conference on Information Reuse and Integration (IRI'2003).
- 12th Int'l Conference on Information and Knowledge Management (CIKM'03).
- ACM Symposium on Principles of Database Systems (PODS'04).
- 8th Int'l Workshop on Mobility in Databases and Distributed Systems (MDDS'05).
- 1st Int'l Conference on Computers, Communications and Signal Processing (CCSP'05).
- 6th Int'l Conference on Data Mining (DTMN 2020).