

Umar Farooq Minhas

PhD Candidate

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Education

Ph.D. in Computer Science, University of Waterloo, Canada. (2008 – 2012)

Thesis: Implementing Highly Available and Scalable Database Systems for Cloud Computing Environments.

Advisor: Dr. Ashraf Aboulnaga

M.S. in Computer Science, University of Waterloo, Canada. (2006 – 2007)

Thesis: A Performance Evaluation of Database Systems on Virtual Machines

Advisor: Dr. Ashraf Aboulnaga

B.S. in Computer Science, National University of Computer & Emerging Sciences, Pakistan. (2000 – 2004)

Magna Cum Laude Graduate

Experience

Academic Experience

Research Assistant, Database Group, University of Waterloo, Canada. (2006 – present)

Teaching Assistant, University of Waterloo, Canada. (2006 – 2008)

Courses: Developing Programming Principles, Introduction to Database Management

Teaching Assistant, National University of Computer & Emerging Sciences, Pakistan. (2001 – 2004)

Courses: Physics-I & II, Assembly Language Programming, Object Oriented Programming

Industrial Experience

Research Intern, Microsoft Research, Silicon Valley Lab, California, USA. (2009 Oct – Dec)

Mentors: Dr. Chandramohan Thekkath and Dr. David Lomet

Research Intern, Microsoft Research, Silicon Valley Lab, California, USA. (2008 Jul – Oct)

Mentors: Dr. Chandramohan Thekkath and Dr. David Lomet

Senior Software Engineer, Information Architects, Islamabad, Pakistan. (2005 – 2006)

Domain: End-to-end Data Warehouse product development for telecommunication operators.

Project: Design and implementation of data cleansing and transformation engine.

Skills: C/C++, SQL, PL/SQL, Oracle 8/9i, Oracle Warehouse Builder.

Software Engineer, Digital Processing Systems, Islamabad, Pakistan. (2004 – 2005)

Domain: Data Warehouse maintenance for Cendant Inc. Avis-Budget group, USA.

Project: Successfully delivered a data warehouse enhancement project acting as a **team leader**.

Skills: C/C++, SQL, PL/SQL, Oracle 8/9i.

Publications

Refereed Journal Publications

Umar Farooq Minhas, Shriram Rajagopalan, Brendan Cully, Ashraf Aboulnaga, Kenneth Salem, Andrew Warfield. “RemusDB: Transparent High Availability for Database Systems”, Submitted to the *VLDB Journal* (special issue for the best papers of VLDB’11).

John Finsson, Robin Cohen, **Umar Farooq Minhas**, Thomas Tran, Grant Weddell, Jie Zhang. “Modeling Trust in Multiagent Mobile Vehicular Ad-hoc Networks Through Enhanced Knowledge Exchange for Effective Travel Decision Making”, Submitted to the *ACM Transactions on Intelligent Systems and Technology* (special issue on Intelligent Mobile Knowledge Discovery and Management Systems).

Umar Farooq Minhas, Jie Zhang, Thomas Tran, Robin Cohen. “A Multi-faceted Approach to Modeling Agent Trust for Effective Communication in the Application of Mobile Ad Hoc Vehicular Networks”, In *IEEE Transactions on Systems, Man, and Cybernetics, Part C (SMC-C)*, Volume 41, Number 3, May 2011.

Umar Farooq Minhas, Jie Zhang, Thomas Tran, Robin Cohen. “Towards Expanded Trust Management for Agents in Vehicular Ad-hoc Networks”, In *International Journal of Computational Intelligence Theory and Practice (IJCITP)*, Volume 5, Number 5, June 2010.

Ahmed Soror, **Umar Farooq Minhas**, Ashraf Aboulnaga, Kenneth Salem, Peter Kokosielis, Sunil Kamath. “Automatic Virtual Machine Configuration for Database Workloads”, In *ACM Transactions on Database Systems (TODS)*, Volume 35, Number 1, February 2010. (extended version of SIGMOD’08 paper)

Refereed Conference and Workshop Publications

Umar Farooq Minhas, David Lomet, Chandramohan A. Thekkath. “Chimera: Data Sharing Flexibility, Shared Nothing Simplicity”, In *International Database Engineering & Applications Symposium (IDEAS’11)*, Lisbon, Portugal, September 2011.

Umar Farooq Minhas, Shriram Rajagopalan, Brendan Cully, Ashraf Aboulnaga, Kenneth Salem, Andrew Warfield. “RemusDB: Transparent High Availability for Database Systems”, In *Proceedings of VLDB Endowment (PVLDB’11)* presented at the *International Conference on Very Large Data Bases (VLDB’11)*, Seattle, Washington, August 2011. (**best paper award**)

Muhammad Bilal Sheikh, **Umar Farooq Minhas**, Omar Zia Khan, Ashraf Aboulnaga, Pascal Poupart, David J. Taylor. “A Bayesian Approach to Online Performance Modeling for Database Appliances using Gaussian Models”, In *International Conference on Autonomic Computing (ICAC’11)*, Karlsruhe, Germany, June 2011.

Umar Farooq Minhas, Jie Zhang, Thomas Tran, Robin Cohen. “Intelligent Agents in Mobile Vehicular Ad-Hoc Networks: Leveraging Trust Modeling Based on Direct Experience with Incentives for Honesty”, In *Proceedings of the IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT’2010)*. (short paper)

Umar Farooq Minhas, Jie Zhang, Thomas Tran, Robin Cohen. “Promoting Effective Exchanges Between Vehicular Agents in Traffic Through Transportation-Oriented Trust Modeling”, In *Workshop on Agents in Traffic and Transportation (ATT’10) held in conjunction with the International Conference on Autonomous Agents and Multiagent Systems (AAMAS’10)*, Toronto, Canada, May 2010.

Ahmed Soror, **Umar Farooq Minhas**, Ashraf Aboulnaga, Kenneth Salem, Peter Kokosielis, and Sunil Kamath. “Automatic Virtual Machine Configuration for Database Workloads”, In *Proceedings of the International Conference on Management of Data (SIGMOD’08)*, Vancouver, Canada, June 2008.

Umar Farooq Minhas, Jitendra Yadav, Ashraf Aboulnaga, and Kenneth Salem. “Database Systems on Virtual Machines: How Much do You Lose?”, In *Proceedings of the International Workshop on Self-managing Database Systems (SMDB’08)*, Cancun, Mexico, April 2008.

Other Publications

Ashraf Aboulnaga, Kenneth Salem, Ahmed Soror, **Umar Farooq Minhas**, Peter Kokosielis, and Sunil Kamath. “Deploying Database Appliances in the Cloud”, In *IEEE Data Engineering Bulletin*, Volume 32, Number 1, March 2009.

Awards/Scholarships

- Best Paper Award, Very Large Data Bases (VLDB) Conference, 2011.
- Gold Medal for top position in BS, National University of Computer & Emerging Sciences, Pakistan, 2004.
- Ontario Graduate Scholarship, Government of Ontario, 2011-2012.
- David R. Cheriton Graduate Scholarship, University of Waterloo, 2010-2011.
- International Doctoral Student Award, University of Waterloo, 2006-2009.
- Doctoral Entrance Scholarship, University of Waterloo, 2006-2007.
- Best Student Award, National University of Computer & Emerging Sciences, Pakistan, 2004.
- Talent Scholarship, Ministry of Science and Technology, Pakistan, 2000-2004.

Presentations

- Chimera: Data Sharing Flexibility, Shared Nothing Simplicity, *International Database Engineering & Applications Symposium (IDEAS)*, September 2011.
- RemusDB: Transparent High Availability for Database Systems, *Very Large Data Bases (VLDB) Conference*, August 2011.
- A Bayesian Approach to Online Performance Modeling for Database Appliances using Gaussian Models, *International Conference on Autonomic Computing (ICAC)*, June 2011.
- Promoting Effective Exchanges Between Vehicular Agents in Traffic Through Transportation-Oriented Trust Modeling, *Agents in Traffic and Transportation (ATT) Workshop*, May 2010.
- High Availability for Database Systems through Remus, *Database Group, University of Waterloo*, April 2010.
- Load Balancing Through Data Sharing on a Shared Nothing DBMS, *Intern Talk, Microsoft Research*, October 2009.
- High Availability through Virtualization, *Database Group, University of Waterloo*, January 2009.
- Adding Data Sharing to SQL Server for Read-mostly Workloads, *Intern Talk, Microsoft Research*, September 2008. (also presented to Microsoft SQL Server Development Team)
- Database Systems on Virtual Machines: How Much do You Lose?, *Self-Managing Database Systems (SMDB) Workshop*, April 2008. (also presented at Microsoft Research in August 2008)

Teaching Assistant Experience

- Introduction to Database Management, University of Waterloo, Winter 2007, Fall 2007, Fall 2008.
- Introduction to Programming, University of Waterloo, Fall 2006.
- Object Oriented Programming, National University of Computer & Emerging Sciences, Pakistan, Winter 2003, Fall 2003, Winter 2004.
- Assembly Language Programming, National University of Computer & Emerging Sciences, Pakistan, Winter 2002, Fall 2002.
- Physics-I & II, National University of Computer & Emerging Sciences, Pakistan, Winter 2001, Fall 2001.

Teaching Interests

- Database Systems, Operating Systems, Distributed Systems, Computer Networks, Computer Architecture

Journal and Conference Reviewing

- Conference on Information and Knowledge Management (CIKM), 2011. (Poster Papers)
- IEEE Transactions on Knowledge and Data Engineering (TKDE), 2010

Other Activities

- Student Member, IEEE, ACM. (Since 2008)
- Member, Photography Club, University of Waterloo.
- Member, Waterloo Space Society, University of Waterloo.
- Student Volunteer, Canada Day, University of Waterloo, July 2010.
- Student Volunteer, March Break Open House, University of Waterloo, March 2009.
- Event Coordinator, National Software Competition (NASCON), Islamabad, Pakistan, October 2003.

References

- Dr. Ashraf Aboulnaga, University of Waterloo, Canada. (ashraf@cs.uwaterloo.ca)
- Dr. Kenneth Salem, University of Waterloo, Canada. (kmsalem@uwaterloo.ca)
- Dr. David Lomet, Microsoft Research, Redmond, USA. (lomet@microsoft.com)
- Dr. Chandramohan Thekkath, Microsoft Research, Silicon Valley, USA. (thekkath@microsoft.com)

Personal

Permanent resident of Canada.