CURRICULUM VITAE

Vijay Kumar
Curators' Distinguished Professor
Director: International Academic Collaboration Program
Computer Science Electrical Engineering
School of Computing and Engineering (SCE)
University of Missouri-Kansas City
5110 Rockhill Road
Kansas City, MO 64110.
Phone: (816) 235 2366.
FAX: (816) 235 5159.
E-mail: kumarv@umkc.edu
http://sce2.umkc.edu/csee/kumarv

EMPLOYMENT

Date	Position Held
2014 – Present	Curators' Professor. Computer Science, University of Missouri-Kansas City, U.S.A.
2002 – 2014	Professor. Computer Science, University of Missouri-Kansas City, U.S.A.
1990 – 2002	Associate Prof. Computer Science, University of Missouri-Kansas City, U.S.A.
1986 – 1990	Asst. Prof. Computer Science., University of Missouri-Kansas City, U.S.A.
1985 – 1986	Asst. Prof. Dept. of Math. and Comp. Sc., Univ. of Massachusetts, Boston, U.S.A.
1983 – 1985	Asst. Professor. Dept. of CIS, Cleveland State Univ., Cleveland, Ohio, U.S.A.
1975 – 1982	Sr. Syst. Eng. Data Processing, International Computers Ltd., Bracknell, U.K.
1973 – 1974	Research Asst. Dept. of Computer Science, Bristol Poly., U.K.
1971 – 1972	Lecturer (Asst. Professor). Dept. of Physics, Ranchi University, India.
1970 – 1971	Research Fellow. CSIR, National Metallurgical Lab., Jamshedpur, India.

Visiting Professor Appointments

Date	Position Held
2013 –	Visiting Professor. NIIT University, Neemrana, India
2013 –	Visiting Professor. Model Institute of Engineering Technology, Jammu, India

Honors and Special Recognition

- System Software Development Award, International Computers Limited, England, 1975.
- Fulbright Senior Specialist in Information Technology: May 2003 –
  Delivered seminars and invited talks at Charles University, University of West Bohemia in Pilsen, Masaryk University, Technical University of Brno, University of Technology at Liberec, and the Institute of Computer Science Academy of Sciences in Czech Republic.
- ACM Distinguished Speaker.

Educational Record

Date	Institution	Degree
1967	Ranchi University, India	B. Sc. (Physics Honors)
1969	Ranchi University, India	M. Sc. (Crystallography)
1973	Cambridge University, Cambridge, U.K.	Grad. Diploma (Computer Sc.)
1975	Manchester University, Manchester, U.K.	M. Sc. (Computer Sc.)
1983	Southampton University, Southampton, U.K.	Ph. D. (Computer Sc.)

Special Academic Activities

India-UMKC academic degree collaboration

I am leading a degree collaboration program with a number of highly rated Indian academic institutions.

Air Force Research Laboratory Summer Faculty Fellow

June – August 2009, 2010, and 2011. Appointed as Summer Faculty Fellow at Air Force Research Laboratory, Rome, New York, USA. A research position for conducting state of the art research in the areas useful to US Air Force.

Community Service

- Judge Kansas City Science Pioneer (from 2004 – Present)
- Judge Shawnee Mission Northwest High school Science competition (2004-2007)

Scholarship Fund

In 2009, I established Mahatma Gandhi Scholarship endowed program for new international PhD students. This program offers partial support to top one or two fresh PhD students admitted to Computer Science Electrical Engineering department.

PUBLICATIONS AND RESEARCH ACTIVITIES

Refereed Journal Papers

1. Jaiswal, Chetan and Vijay Kumar, "IGOD: Identification of Geolocation of cloud Datacenters", accepted for publication in the special issue on Security & Privacy in Cloud Computing, Elsevier Journal of Information Security and Applications, February 2016.

2. Jaiswal, Chetan and Vijay Kumar. "IGOD: Identification of Geolocation Of cloud Datacenters" – Accepted for publication at Special Issues on Security and Privacy in Cloud Computing, Elsevier's Journal of Information Security and Applications to appear in February, 2016.

3. Jaiswal, Chetan, Mahesh Nath, and Vijay Kumar. "Location-Based Security Framework for Cloud Perimeters." IEEE *Cloud Computing,* 1.3 (2014): 56-64.

4. Vijay Kumar, "Impact of Brooks-Iyengar Distributed Sensing Algorithm on Real Time Systems," *IEEE Transactions on Parallel and Distributed Systems*, Feb. 15, 2013.

5. Cory Beard, ZhiQiang Chen, Vijay Kumar, Yugyung Lee, W. Daniel Leon-Salas, Praveen Rao, "SAVEUS: SAving Victims in Earthquakes through Unified Systems," *International Journal of Communication Networks and Distributed Systems* (IJCNDS), Vol. 10, No. 4, 2013.

6. D. Acharya and V. Kumar, Mobile Broadband based Healthcare Management: Advantages, Issues and Challenges, Intl Journal for Comp in Healthcare, Vol. 1, No. 3, 2011.

7. Debopam Acharya, Vijay Kumar Gary M. Gaddis, and Nicholas Garvin, "SAVE: A Wireless Java Enabled Automobile Accident Reporting System," *International Journal of Intelligent Defense Support Systems*, Vol. 1, No. 3, 2008.

8. Sanjay K. Madria, M. Baseer, Vijay Kumar, and Sourav Bhowmick, "A Multiversion Transaction Model and Concurrency Control Mechanism For Mobile Database Systems", *Parallel and Distributed Databases*, Vol. 22, No. 2-3, December, 2007, pp: 165-196.

9. Vijay Kumar and Debopam Acharya. "Web Bazaar: A Location-Dependent Secured Mobile Web Service System", Special Issue of the Journal *Revue Ingénierie des Systèmes d'information Networking and Information Systems*, July 2005.

10. Debopam Acharya and Vijay Kumar. "Indexing Location Dependent Data in Broadcast Environment", *Journal of Digital Information Management (JDIM)*, Vol. 3, Issue 2, June 2005.

11. Debopam Acharya, Vijay Kumar and Margaret H. Dunham, "InfoSpace: Hybrid and Adaptive Public Data Dissemination System for Ubiquitous Computing", Accepted for publication in the Special issue on Pervasive Computing of *Wireless Communications and Mobile Computing*, John Wiley.

12. Vijay Kumar, Margaret H. Dunham and Nitin Prabhu, "A Mobile Transaction Framework Supporting Spatial Replication and Spatial Consistency," *Special Issue on Mobile Databases International Journal of Computer Systems Science & Engineering.* Vol. 20, No 2. March 2005.

13. Dharma P. Agrawal, Mingming Lu, Tim C. Keener, Ming Dong, and Vijay Kumar, "Exploiting the use of Wireless Sensor Networks for Environmental Monitoring", *Journal of the Environmental Management*, May 2004.

14. Rajgopal Kannan, Ram Kalindini, Sitharam Iyengar, and Vijay Kumar, "Energy and Rate Based MAC Protocol for Wireless Sensor Networks", *ACM Sigmod Record*, Dec. 03, pp: 60-65.

15. Sashidhar Gadiraju, Vijay Kumar, and Maggie Dunham, "Recovery in the Mobile Wireless Environment Using Mobile Agents", *IEEE Transactions on Mobile Computing*, Vol. 3, No. 2, April-June 2004, pp: 180-191.

16. Vijay Kumar, "Sensor: The Atomic Computing Particle", *ACM Sigmod Record*, December 2003, pp: 16-21.

17. Qun Ren, Maggie Dunham, and Vijay Kumar, "Semantic Caching and Query Processing". *IEEE Transactions on Knowledge and Data Engineering*, Vol. 15, No. 1, January/February 2003, pp 192-210.

18. Vijay Kumar, Nitin Prabhu, Maggie Dunham, and Yasemin A. Seydim, "TCOT - A Timeout-based Mobile Transaction Commitment Protocol", *Special issue of IEEE Transaction on Computers*, Vol. 51, No. 10, Oct. 2002, pp: 1212-1218.

19. Vijay Kumar and Narayan Gaddipati, "An Efficient CCM KRISHNA for High Contention Environment and its Performance Comparison with WDL". *Data and Knowledge Engineering*, Vol. 34, 2000, pp: 39-76.

20. Anindya Datta, Sang Son, and Vijay Kumar, "Is a Bird in Hand Worth More than Two in the Bush? Limitations of Priority Cognizance in Conflict Resolution for Firm Real Time Database Systems". *IEEE Transactions on Computers*, Vol. 49, No. 5, May 2000, pp: 482-502.

21. Anindya Datta, Ashlihan Celik, Debra E. VanderMeer and V. Kumar, "Adaptive Broadcast Protocols to Support Efficient and Energy Conserving Retrieval from databases in Mobile Computing Environments". *ACM Transactions on Database Systems (TODS)*, Vol. 24, No. 1, March 1999, pp: 1-79.

22. Albert Burger, Vijay Kumar and Mary Lou Hines, "Performance of Multiversion and Distributed Two-Phase locking Concurrency Control Mechanisms in Distributed Databases". *Information Sciences*, Vol. 1-2, 1997, pp: 129-152.

23. V. Kumar, "KRISHNA - An efficient CCM based on Dynamic Attributes of Transactions and its Performance", *Data and Knowledge Engineering*. Vol. 21, 1997, pp: 281-296.

24. V. Kumar and Shawn Moe, "Performance of Recovery Algorithms for Centralized database Management Systems", *Information Sciences*, An International Journal, Vol. 86, Nos. 1-3, September 1995, pp: 101-147.

25. Vijay Kumar and Judy Mullins, "An Integrated Data Structure with Multiple Access Paths for Database Systems and its Performance," *Data and Knowledge Engineering*, 16 (1995), pp: 51-72.

26. Aris Ouksel, V. Kumar and Chayanika Majumdar, "Management of Concurrency in Interpolation Based Grid File Organization and its Performance", *Information Sciences*, An International Journal, Vol. 78, Nos. 1 and 2, May 1994, pp: 129-158.

27. V. Kumar and Albert Burger,"Performance of Distributed Multiversion Concurrency Control Mechanisms in Partitioned and Partially Replicated Databases", *Computer Science and Informatics*, Vol 23, No. 1, 1993, pp: 47-58.

28. V. Kumar and Albert Burger, "Performance Measurement of Main Memory Database Recovery Algorithms Based on Update-in-Place and Shadow Approaches", Special Issue of *IEEE Trans on Knowledge and Data Eng.*, Vol. 4, No. 6, Dec. 1992, pp: 567-571.

29. V. Kumar, Jerry Place and Gi-Chul Yang, "An Efficient Algorithm for Mutual Exclusion using Queue Migration in Computer Network", *IEEE Trans on Knowledge and Data Engineering*, Vol. 3, No. 3, Sep. 1991, pp: 380-384.

30. V. Kumar and M. Hsu "A Superior Two-Phase Locking Algorithm and its Performance", *Information Sciences*, An International Journal, Vol. 54, No. 1, 2., 1991, pp: 147-168.

31. V. Kumar, "Concurrent Operations on Extendible Hashing and its Performance", *Communications of the ACM*, Vol. 33, No. 6, June 1990, pp: 681- 694.

32. Jerry Place, V. Kumar and Appie van de Liefvoort, "The Behavior of Database Concurrency Control Mechanisms under Bursty Arrivals", *Springer Lecture Notes in Computer Science*, No. 468, Edited by S.G. Akl, F. Fiala and W.W. Koczkodaj, 1990, pp:

33. V. Kumar, "Performance Comparison of Some Database Concurrency Control Mechanisms based on Two-Phase Locking, Timestamping and Mixed Approach", *Information Sciences*, Vol. 51, No. 3, 1990, pp: 221-261.

34. V. Kumar, "Concurrency Control and Recovery in Main Memory Database Systems", *The Journal of Computer Information Systems*, Vol. 34, No. 1, 1990, pp: 24-30.

35. V. Kumar, "Current Trends in Transaction Processing Systems", *Journal of Systems Management*, January 1990, pp: 10-20.

36. V. Kumar, "Concurrency on extendible Hashing", *Information Processing Letters*, Vol. 30, No. 6, April 1989, pp: 35-41.

37. V. Kumar, "Behavior of Read:Write Ratio and Read-Only Transactions", *Information Systems*, Vol. 14, No. 1., 1989, pp: 1-12.

38. V. Kumar, "Synchronization and Recovery in Database Systems", *Infotech State of the Art Reports*, England, Series 9, No. 8, 1981, pp: 469-481.

National and International Refereed Conferences and Workshops

1. Mahesh Maddumala and Vijay Kumar, "Efficient Design of Firewall Temporal Policies", 11th IEEE International Workshop on Security, Trust, and Privacy for Software Applications, 2016, Atlanta, Georgia.

2. (Best Paper Award) Jaiswal, Chetan and Vijay Kumar. "IGOD: Identification of Geolocation Of cloud Datacenters" in the proceedings of *The 40th IEEE Conference on Local Computer Networks (LCN)*, October 26-29, 2015, Clearwater Beach, Florida, USA.

3. Jaiswal, Chetan and Vijay Kumar. "Identifying Geolocation of Cloud Datacenter Hosting Mobile User's Data" in the proceedings of *The 16th IEEE International Conference on Mobile Data Management*, 15 - 18 June, 2015, Pittsburgh, Pennsylvania, USA.

4. Jaiswal, Chetan and Vijay Kumar. "DbHAaaS: Database High Availability as a Service", in the proceedings of *The 11th International Conference on Signal Image Technology & Internet Based Systems 23-27*, November 2015 - Bangkok, Thailand.

5. (Best Paper Award) Jaiswal, Chetan and Vijay Kumar. "IGOD: Identification of Geolocation Of cloud Datacenters" in the proceedings of *The 40th IEEE Conference on Local Computer Networks (LCN)*, October 26-29, 2015, Clearwater Beach, Florida, USA

6. (Best Paper Award) Jaiswal, Chetan and Vijay Kumar. "IGOD: Identification of Geolocation Of cloud Datacenters", Community of Scholars, IDSC, UMKC – 2015

7. Jaiswal, Chetan and Vijay Kumar. "Identifying Geolocation of Cloud Datacenter Hosting Mobile User's Data" in the proceedings of *The 16th IEEE International Conference on Mobile Data Management (MDM2015)*, 15 - 18 June, 2015, Pittsburgh, Pennsylvania, USA.

8. Chetan Jaiswal and Vijay Kumar, Light-Weight Crypto Scheme for Cellular P2P Communication. *The 2013 International Conference on Collaboration Technologies and Systems (CTS 2013)*. May 20-24, 2013, San Diego, California, USA.

9. Chetan Jaiswal and Vijay Kumar, Pairwise Key Generation Scheme for Cellular Mobile Communication. *5th International Workshop on Dependable Network Computing and Mobile Systems (DNCMS 2012)* in conjunction with 31st IEEE International Symposium on Reliable Distributed Systems (SRDS), 8th-11th October 2012, Irvine, California.

10. Jaiswal, Chetan and Vijay Kumar. "Pairwise Key Generation Scheme for Cellular Mobile Communication." *Proceedings of the 2012 IEEE 31st Symposium on Reliable Distributed Systems. IEEE Computer Society*, 2012.

11. Amol Khedkar and Vijay Kumar, Self-Synchronizing Based Air Traffic Control and Collision Avoidance System. 30th Digital Avionics Systems Conference, Seattle, WA, October 16-20, 2011.

12. Debopam Acharya and Vijay Kumar, Security of MBAN based Health Records in Mobile Broadband Environment. *8th International Conference on Mobile Web Information Systems (MobiWIS)*, Niagara Falls, Ontario, Canada. September 19-21, 2011.

13. Amol Khedkar and Vijay Kumar, "Flash-Based Logging for Database Updates," *Special Session on Collaboration for Dynamic Resource Management in Mobile P2P Networks (CDRM 2011) in 2011 International Conference on Collaboration Technologies and Systems (CTS 2011)*, May 23-27, 2011, Philadelphia, Pennsylvania, USA, 2011.

14. Vijay Kumar, James Metzler, Mark Linderman, Jon Jones, Mark Alford, Adnan Bubalo, Maria Scalzo, "Object Discovery, Identification and Association," *International Defense, Security and Sensing conference (SPIE)*, Orlando, Florida, USA. April 25–29, 2011.

15. Amol Khedkar and Vijay Kumar, "Self-Synchronizing Moving Objects Using Contextual Information," *2010 International Conference on Information and Knowledge Engineering (IKE'10)*, Las Vegas, July 12-15, 2010, USA.

16. Debargh Acharya, Vijay Kumar and Debopam Acharya, "DVD: A Secure Unicast based Pairwise Key Generation Scheme for Wireless Sensor Networks", The *Second International Conference on Sensor Technologies and Applications (SENSORCOMM 2008)*, August 25-31, 2008 - Cap Esterel, France.

17. Debopam Acharya, Vijay Kumar, "DataMall: A Mobile Broadcasting Environment for location dependent data with provision for Secure Mobile Transactions," *International Conference on Communication Convergence and Broadband Networking (ICCBN-2008)*, Bangalore, India, July 17-19, 2008.

18. Debopam Acharya, Vijay Kumar, Nicholas Garvin, Ardian Greca and Gary M. Gaddis, "A Sun SPOT based Automatic Vehicular Accident Notification System," *5th IEEE International Conference on Information Technology and Applications in Biomedicine (ITAB 2008)*, 30- 31 May, 2008, Shenzhen, China.

19. Debopam Acharya, Vijay Kumar, and Gary M. Gaddis, "A Mobile System for Detecting and Notifying Vehicle Rollover Events". *15th International Conference on Advanced Computing & Communication (ADCOM 2007)*, December, 18 - 21, 2007, Guwahati, India.

20. Evens Jean, Yu Jiao, Ali R. Hurson, and Vijay Kumar, "Pushing Sensor Network Computation to the Edge while Enabling Inter-Network Operability and Securing Agents." The Third International Innovations and Real-time Applications of Distributed Sensor Networks (DSN) Symposium http://www.ira-dsn.org/ November 26-27, 2007. Shreveport, Louisiana.

21. Margaret H. Dunham and Vijay Kumar, "Stream Hierarchy Data Mining for Sensor Data." The Third International Innovations and Real-time Applications of Distributed Sensor Networks (DSN) Symposium (http://www.ira-dsn.org/) Shreveport, Louisiana, November 26-27, 2007.

22. Vijay Kumar, Praveen Rao, Ali Hurson, and Sanjay Madria, "Management of Sensor Networks via Graph Mining." The 3rd International Innovations and Real-Time Applications of Distributed Sensor Networks (DSN) Symposium (http://www.ira-dsn.org/), Shreveport, Louisiana, November 26-27, 2007.

23. Vijay Kumar, "Sensor Mining in a Massive Wireless Sensor Network", *MobiSensor NSF Workshop*, University of Pittsburgh, Pittsburgh, January 15-17, 2007.

24. Debopam Acharya, Vijay Kumar, and Gi-Chul Yang, "DAYS Mobile: A Location based Data Broadcast Service for Mobile Users". The *22nd ACM Symposium on Applied Computing,* Seoul, Korea, March 11-15, 2007.

25. Vijay Kumar, "Sensor Mining", *The 2nd International Symposium on Innovations and Real-Time Applications of Distributed Sensor Networks*, Embassy Suites, Crystal City, Washington DC, USA October 16-17, 2006.

26. V. Kumar, "Trust and Security in Mobile Peer-to-Peer Systems (Invited paper)," *3rd International Workshop on P2P Data Management, Security and Trust (PDMST'06)* in conjunction with the 17th International Conference on Database and Expert Systems Applications (DEXA'2006), Krakow, Poland, September 4 – 8, 2006.

27. V. Kumar, "Security in Location Dependent Transactions on Web Services," (Invited Paper), *IEEE Workshop on Distributed Systems and Networks*, Bern, Switzerland, in Cooperation with: University of Bern and Purdue University, May 9, 2006.

28. Debopam Acharya and Vijay Kumar, "Location based Indexing Scheme for DAYS," *4th International ACM Workshop on Data Engineering for Wireless and Mobile Access (MobiDE'05)*, in conjunction with SIGMOD 2005, June 12, 2005, in Baltimore, Maryland, USA.

29. Nitin Prabhu and Vijay Kumar, "Data Scheduling for Multi-item and Transactional Requests in On-demand Broadcast," *The 6th International Conference on Mobile Data Management (MDM'05)*, Ayia Napa, Cyprus, May 9-13, 2005.

30. Vijay Kumar, "Data in Your Space", (Keynote Paper), *1st International Conference on Distributed Computing and Internet Technology (ICDCIT04)*, Bhubaneshwar, Dec. 22-24, India, 2004.

31. Vijay Kumar, Nitin Prabhu, and Panos K. Chrysanthis, "HDC – Hot Data Caching in Mobile Database Systems", *The 3rd ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-05)*, Cairo, Egypt, January 3-6, 2005.

32. Terry Bearly and Vijay Kumar, "Expanding Trust Beyond Reputation in Peer-To-Peer Systems**",** 15th International Workshop on Database and Expert Systems Applications (DEXA 2004), 30 August - 3 September 2004, Zaragoza, Spain.

33. Nitin Prabhu, Debopam Acharya, Vijay Kumar "Discovering and Using Web Services in M-Commerce", *VLDB Workshop on Technologies for E-Services (TES-04) in conjunction with 30th International Conference on Very Large Data Bases (VLDB 2004)*, Toronto, Canada, August 30 - September 1, 2004.

34. Nitin Prabhu, Vijay Kumar, and Indrakshi Ray, "Periodic scheduling in on-demand broadcast system", 3rd *Int. Conf. On Information Systems Technology and its Applications (ISTA04)*, Salt Lake City, Utah, USA, July 14-16, 2004.

35. Indrakshi Ray, Monte Lunacek, Ross M. McConnell, Vijay Kumar, "Reducing Damage Assessment Latency in Survivable Databases", *21st British National Conference on Databases*, 7th - 9th July 2004, Edinburgh, UK.

36. Nitin Prabhu, Vijay Kumar, Indrakshi Ray, and Gi-Chul Yang, "Concurrency Control in Mobile Database Systems", *The 18th International Conference on Advanced Information Networking and Applications (AINA 2004)*, Fukuoka Institute of Technology (FIT), Fukuoka, Japan, March 29 - March 31, 2004.

37. Vijay Kumar, (Invited paper) "Integration, Diffussion and Merging in Information Management Discipline", *30th Anniversary Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2004)*, January 24-30, 2004, Czech Republic.

38. Nimisha Garg, Vijay Kumar, and Maggie H. Dunham, "Information Mapping and Indexing in DAYS", *6th International Workshop on Mobility in Databases and Distributed Systems, in conjunction with the 14th International Conference on Database and Expert Systems Applications (DEXA'2003)* September 1-5, 2003 Prague, Czech Republic.

39. Chaitanya Garikiparthi, Vijay Kumar, and Sharma Chakravarthy, "A Multi-level Scheme for Web Security", *6th International Conf. on High Perfance Computing (ASIA 2002)*, Dec. 16-19, 2002, Banglore, India.

40. Deendayal Dinakarpandian and Vijay Kumar, "BIOMIND-Protein Property Prediction by Property Proximity Profiles", *17th ACM Symp. on Applied Computing (SAC) 2002*. March 10-14, 2002, Madrid, Spain.

41. Vinode Vulupala and Vijay Kumar, "Dynamic Mobile IP for Improving TCP/IP Performance", Workshop on Reliable and Secure Applications in Mobile Environment, In conjunction with 20th IEEE Symposium on Reliable Distributed Systems SRDS'2001, New Orleans, October 28-31, 2001.

42. Ayse Seyedim, Maggie Dunham, and Vijay Kumar, "An Architecture for Location Dependent Query Processing", 4th Int. Workshop on Mobility in Databases and Distributed Systems, Technical University of Munich, Germany, September 3-7, 2001.

43. Vonode Vulupulla and Vijay Kumar, "Mobile IP", *4th World Multiconference on Systematic, Cybernatics, and Informatics (SCI2001)*, Orlando, Florida, July 22-25, 2001, pp: 352-360.

44. Kiran Chelluri and Vijay Kumar, (Invited paper), "Data Classification and Management in Very Large Data Warehouses", 3rd Int. Workshop on Advanced Issues of E-commerce and Web-based Information Systems, San Jose, California, June 21-22, 2001, pp: 52-57.

45. M. Dunham, A. Al-Mogren, A. Seydim, and Vijay Kumar, "Data in Your Space", (Invited Paper), 3rd Int. Workshop on Advanced Issues of E-commerce and Web-based Information Systems, San Jose, California, June 21-22, 2001, pp: 66-73.

46. Yasemin Seydim, Margaret Dunham, and Vijay Kumar, "Location Dependent Query Processing", *2nd ACM Int. Workshop on Data Engineering for Wireless and Mobile Access* (MOBIDE01), Santa Barbara, May 20, 2001, pp: 47-53.

47. Mukesh Mohania, Vijay Kumar, (Invited paper) Yahiko Kambayashi, and Bharat Bhargava, "Secured Web Access", *International conference on Digital Libraries*, Kyoto, Japan, No. 13-17, 2000, pp: 182-189.

48. Vijay Kumar, "A Timeout-based Mobile Transaction Commitment Protocol", *2000 ADBIS-DASFAA Symposium on Advances in Databases and Information Systems*, Springer Verlag Lecture Notes in Computer Science No. 1884. In Cooperation with ACM SIGMOD, Moscow, Prague, Czech Republic, September 5-8, 2000, pp: 339-345.

49. S. K. Madria, Bharat Bhargava, E. Pitoura, and Vijay Kumar, "Data Organization Issues for Location-Dependent Queries in Mobile Computing", *2000 ADBIS-DASFAA Symposium on Advances in Databases and Information Systems*. Springer Verlag Lecture Notes in Computer Science No. 1884. In Cooperation with ACM SIGMOD, Moscow, Prague, Czech Republic, September 5-8, 2000, pp: 142-156.

50. Lein Harn, H.-Y Lin, and Vijay Kumar, "A fair E-lottery without the assistance of a mutually trusted drawing party", *Proc. of the 10th National Conference on Information Security Information Security Conference*, Taiwan, May 5-6, 2000, pp: 323-336.

51. Kalpana Dash, R. B. Mohapatra, and Vijay Kumar, "A Transaction Processing Model for Mobile Computing Environment", *Conference on Information Technology*, Bhubaneshwar, India, Dec. 20-22, 1999, pp: 15-25.

52. Sunil Samtani, Vijay Kumar, and Mukesh Mohania, "Self Maintenance of Multiple Views in Data Warehousing", *8th International Conf. on Information and Knowledge Management* (CIKM '99), Kansas City, MO, November 2-6, 1999, pp: 292-299.

53. Vijay Kumar, "Challenges and Opportunities in the Management of Location Dependent Data and Transaction Processing in Mobile Databases", (A panel and discussion paper), *Int. Workshop on Mobility in Databases and Distributed Systems (MDDS99)*, Florence, Italy, September 3, 1999, pp: 5-6.

54. Margaret Dunham and Vijay Kumar, "Impact of Mobility on Transaction Management", *Int. Workshop on Data Engineering for Wireless and Mobile Access (MobiDE99)*, Seattle, Washington, August 20, 1999, pp: 14-21.

55. Sunil Samtani, Mukesh Mohania, Vijay Kumar, and Yahiko Kambayashi, "Recent Advances and Research Problems in Data Warehousing", *Int. Workshop on Data Warehousing and Data Mining (ER '98)*, Singapore, Nov. 1998, pp: 81-92.

56. Margaret H. Dunham, and Vijay Kumar, "Location Dependent Data and its Management in Mobile Databases", *Proc. of the Ninth Workshop of Database and Expert Systems Applications (DEXA'98)*, Vienna, Austria, August 26-28, 1998, pp: 549-555.

57. Sunil Samtani and Vijay Kumar, "Maintaining Consistency in Partially Self-Maintainable Views at the data Warehouse", *Int. Workshop on Data Warehouse Design and OLAP Technology (DWDOT' 98)*, Vienna, Austria, August 26-28, 1998, pp: 206-211.

58. Invited Paper: Vijay Kumar, "Gharelu Viddyapeeth: An Educational Institution on the Air", *Int. Conference on Technical Education in 21st Century (ICTE-21)*, Indore, India, January 8-10, 1998, pp: 22-32.

59. Yutong Wang and Vijay Kumar, "Performance of Main Memory Recovery Algorithms", 9th international Conference on Management of Data (*COMAD 97),* Calcutta, India, 1997, pp: 55-63.

60. Raju V. J. Chintalapati, Vijay Kumar and Anindya Datta, "An Adaptive Location Management Algorithm for Mobile Computing", *22nd Annual Conference on Local Computer Networks (LCN '97)*, Minneapolis, Minnesota, Nov. 2-5, 1997, pp: 107-114.

61. Anindya Datta, Igor R. Viguier, Sang H. Son and Vijay Kumar, "A Study of Priority Cognizance in Conflict Resolution for Firm Real Time Database Systems", Second International Workshop on Real-Time Databases, RTDB'97, September 18-19, 1997, Burlington, Vermont, USA. The paper also appeared in Azer Bestavros and Victor Fay Wolfe (eds.) Real-Time and Database and Information Systems - Research Advances, Azer Bestavros and Victor Fay Wolfe (eds.), pp: 167-180.

62. Anindya Datta, Aslihan Celik, Jeong G. Kim, Debra E. VanderMeer and Vijay Kumar, "Adaptive Broadcast Protocols to Support Efficient and Energy Conserving Retrieval from Databases in Mobile Computing Environments", *13th IEEE International Conf. on Data Engineering (ICDE '97),* Birmingham, England, April 7-11, 1997, pp: 124-133.

63. V. Kumar, "Recovery in Main Memory Database Systems", *7th International Conference on Database and Expert Systems Applications (DEXA 96)*, Zurich, Switzerland, September, 1996, pp: 768-778.

64. Hung-Yu Lin, Lein Harn and V. Kumar, "Authentication Protocols in Wireless Communications*", International Conference on Automation*, Indore, India, Dec. 12-14, 1995, pp: 49-57.

65. V. Kumar, "An Efficient Algorithm for Managing Concurrent Operations on Data Using Dynamic Attributes of Transactions", *5th International Conference on Management of Data (COMAD '93)*, Calcutta, India, pp: 68-95.

66. V. Kumar and Judy Mullins, "An Integrated data Structure with Multiple Access Paths for Database Systems and its Performance", *IEEE COMPSAC*, Phoenix, Arizona, April, 1993, pp: 241-247.

67. V. Kumar and Albert Burger, "Performance Measurement of Distributed Concurrency Control Mechanisms with Object-Oriented Simulation Approach", The 23rd Annual Pittsburgh Conference on Modeling and Simulation, Pittsburgh, May 1992.

68. V. Kumar and Judy Mullins, "An Integrated data Structure with Multiple Access Paths for Database Systems", *ACM Annual Computer Science Conference*, Kansas City, Missouri, March 3-5, 1992, pp: 57-64.

69. V. Kumar and Albert Burger, "Performance Measurement of Some main Memory Database Recovery Algorithms", *7th IEEE International Conference on Data Engineering,* Kobe, Japan, 1991, pp: 436-443.

70. V. Kumar and James Mumper, "KRISHNA - Concurrency Control Algorithms based on Dynamic Attributes", *2nd International Conference on Database and Expert Systems Applications (DEXA 91),* Berlin, Germany, 1991, pp: 185-190.

71. Margaret Easter and V. Kumar, "Extendible hashing for Distributed database Systems", *2nd International Conference of the Information Resource Management Association*, Memphis, Tennessee, 1991, pp: 124-131.

72. Albert Burger, V. Kumar and Pat Simpson, "An Integrated Data Structure with Multiple Access Paths", *IFIP WG 2.6, 2nd Conference on Visual Database Systems*, Budapest, Hungry 1991, pp: 301-315.

73. V. Kumar and Albert Burger, "Main Memory Database Recovery Algorithms and their Performance", *2nd IEEE Symposium on Parallel and Distributed Processing*, Dallas, TX, December 1990, pp: 152-155.

74. B. Unger, L. Harn and V. Kumar, "Entropy as a measure of database information", *6th Annual Computer Security Applications*, April, 1990, pp: 80-87.

75. Albert Burger and V. Kumar, "PRABHA- A distributed concurrency control mechanism", *ACM Annual Computer Science Conference*, Washington, D.C., February 20-22, 1990, pp: 392-397.

76. V. Kumar, Jerry Place and Appie van de Liefvoort, "The behavior of database Concurrency control mechanisms under bursty traffic", *International Conference on Computing and Information, ICCI'90*, Toronto, Canada, May, 1990, pp: 250-254.

77. V. Kumar and Albert Burger, "Recovery in Main Memory Systems", *Int. Conference on Computing and Information, ICCI'90*, Toronto, Canada, May, 1990, pp: 215-220.

78. V. Kumar, Gi-Chul Yang and Jerry Place "A Superior Algorithm for Mutual Exclusion in Computer Networks-VISHNU", *IFIP 11th World Computer Congress*, San Jose, CA, August, 1989, pp: 169-174.

79. V. Kumar, Gi-Chul Yang and Jerry Place, "An Efficient Algorithm for Mutual Exclusion in Distributed Systems", *ACM/IEEE Workshop on Applied Computing*, Stillwater, OK, August, 1989.

80. V. Kumar and Lingling Polican, "Managing Concurrent Transactions on Extendible Hashing", *ACM/IEEE Workshop on Applied Computing*, Stillwater, OK, August 1989.

81. V. Kumar, Al Goerner, Jerry Place and Appie van de Liefvoort, "Database Concurrency Control Algorithms and Stochastic Predicate Event Nets", *International Conference on Computing and Information, ICCI'89*, Toronto, Canada, July, 1989, pp: 135-138.

82. V. Kumar, Alan Goerner, Jerry Place and Appie van de liefvoort, "Stochastic Predicate Event Nets for Modeling Database Concurrency Control Mechanisms", *ACM/IEEE Workshop on Applied Computing*, Stillwater, OK, June 1989, pp: 210-215.

83. V. Kumar, "A Concurrency Control Mechanism based on Extendible Hashing for Main Memory Database Systems", *ACM Annual Computer Sci. Conf*, Louisville, Kentucky, February 21-23, 1989, pp: 109-113.

84. Gi-Chul Yang, Jerry Place, and V. Kumar, "A Floating Queue Algorithm for Mutual Exclusion in Computer Networks", *International, Computer Symp*. (ICS'88), Taipei, Taiwan, December 1988, pp: 1022-1030.

85. V. Kumar and Jerry Place, "An Analysis of the Behavior of a New Non-Preemptive Two-Phase Locking Mechanism Using an Open Queuing Network", National Conf. of Decision Science Institute, Las Vegas, August, 1988, pp: 45-51.

86. V. Kumar, "An Analysis of Roll-Back and Blocking Operations of Three Concurrency Control Mechanisms", AFIP Conf. Proceedings 56, *National Computer Conference*, Chicago, May 1987, pp: 485-497.

87. V. Kumar, "Two-Phase Locking Schemes and Read-Only Transactions", *National Conference of Decision Science Institute*, Boston, September 1987.

88. V. Kumar and Prashant Palvia, "Physical Database Design to Improve Concurrency", *SE Decision Science Institute Conference*, Richmond, Virginia, July, 1987, pp: 81-91.

89. V. Kumar, "Transaction Roll-Back and Blocking, and Read-Only Transactions" *North American Conference International Business School Computer User Group*, Flint, Michigan, May 1987.

RESEARCH FUNDING AND GRANTS

NSF

1. A Logic-based Security Framework for Wired and Mobile Perimeter
   PI: Vijay Kumar, University of Missouri-Kansas City.
   Amount: $150,000.

Duration: 2 years. September 2013 to August 2015. This project actually started a year late (September 2014) and with extension it will end in August 2016.

2. Collaborative Research in Location Dependent Data Management
   PI: Vijay Kumar (PI), University of Missouri-Kansas City.
   Amount: $364,354.
   Co-PI: Maggie Dunham, Southern Methodist University.
   Duration: 3 years. October 1999 to September 2002.

3. Collaborative Research in Location Dependent Data Management
   PI: Vijay Kumar.
   Funding: REU (Research Experience for Undergraduate).
   Amount: $12,000. October 1999 to September 2002.

4. Collaborative Research in DAYS - Data in Your Space
   PI: Vijay Kumar (PI), University of Missouri-Kansas City.
   Amount: $280,000.
   Co-PI: Maggie Dunham, Southern Methodist University.
   Duration: 3 years. August 2002 to July 2005.

NSF Workshop

1. Workshop on Context-Aware, Mobile Database Management (CAMM)
   PI: Vijay Kumar (University of Missouri-Kansas City).
   Co-PI: Stan Zdonik (Brown University).
   Funding Agency: NSF.
   Amount: $35,000. January 1999.

Air Force

1. Self-Synchronization of Mobile Objects.
   PI: Vijay Kumar
   Summer Faculty Fellow Research Extension Grant 2009 and 2010.
   Amount: $20,000
   Air Force Research Lab, Rome, NY.

Industry Grants

1. Topic: Main Memory Database Systems
   Amount: $107,534. Duration: 2 Years. Dates: 1987- 1989.
   Funding Agency: United Telecom Inc.

   Topic: Integrated Data Structure with Multiple Access Paths
   Amount: $32,000. Duration: 2 years.
   Funding Agency: Consortium for Advance Technology, CSTP, UMKC.

2. HP-Labs research award (1999). Research topic: Workflow on mobile web.
   Amount: $5,000.
   Funding Agency: HP-Labs.

3. HP-Labs research award (2000). Research topic: Mobile computing.
   Amount: $5,000.

Funding Agency: HP-Labs.

4. St. Luke's Research Grant (2005). Research topic: Design and development of an wireless event notification system (NOW – Notification On Wireless).
   Amount: $6,890 (one year).
   Funding agency: St. Luke's Research Division.

5. St. Luke's Research Grant (2011). INFORMER: A System for Immediate and Accurate Notification of Critical Data to Relevant Medical Professionals for Patient Care.
   Amount: $15,280.00 (One year).
   Funding agency: St. Luke's Research Division.

6. RealLife 101 Web Development Grant (2011). Web Site Development and Implementation for Real 101.
   Amount: $17,750.
   Funding Agency: RealLife 101.

7. Toyota, USA: Green Energy Project (2011-2014).
   $127,000.

8. Database Design and Data Conversion for Concussion data.
   Amount: $184,349 (Two years 2014-2016)
   Funding Agency: National Hockey League (NHL).

UMKC and UM Research Board Grants

1. Topic: Performance measurement of Concurrency Control Mechanisms for DBMS
   Amount: $4,000
   Funding Agency: UMKC Faculty Research Grant

2. Topic: Design, Development and Implementation of Recovery Algorithms for Main Memory Database
   Amount: $40,000
   Duration: 22 months (1994-1996)
   Funding Agency: University Research Board

3. Topic: Design, Development and Implementation of Recovery Algorithms for Main Memory Database
   Amount: $17,385
   Duration: 12 months (1996-1997)
   Funding Agency: University Research Board.

4. Online Course Development (2011)
   Amount: $33,000
   Funding Agency: UM System.

Books

1. Performance of Concurrency Control Mechanisms for Centralized Database Systems
   Editor: Vijay Kumar.
   Publisher: Prentice Hall, May 1996.
   ISBN: 0-13-065442-6.

2. Recovery Mechanism in Database Systems
   Editors: Vijay Kumar and Mei Hsu.
   Publisher: Prentice-Hall, January 1998.
   ISBN: 0-13-614215-X.

3. Database Recovery
   Authors: Vijay Kumar and Sang S. Son.
   Publisher: Kluwer International, 1998.
   ISBN: 0-7923-8192-0.

4. Mobile Database Management Systems
   Author: Vijay Kumar
   Publisher: John Wiley and Sons, 2006
   ISBN: 0-471-46792-8. (Chinese translation ISBN: 978-7-5636-2486-7)

5. Fundamentals of Pervasive Database Systems
   ISBN: 978-1-118-024249. Author: Vijay Kumar. Publisher: Wiley. 2013.

Book Chapters

1. Jaiswal, Chetan and Vijay Kumar. "Highly Available Fault-Tolerant Cloud Database Services", accepted for publication in the book titled "Developing Interoperable and Federated Cloud Architectures", for release in Advances in Systems Analysis, Software Engineering, and High Performance Computing (ASASEHPC) book series. ISSN: 2327-3453

2. "A Study of Priority Cognizance in Conflict Resolution for Firm Real Time Database Systems," Azer Bestavros and Victor Fay Wolfe (Eds.) Real-Time and Database and Information Systems - Research Advances.

3. "Concurrency Control Mechanisms in Distributed Database Systems,"
   Encyclopedia of Distributed Computing,
   Partha Dasgupta and Joseph E. Urban (Eds.), Kluwer.

4. Building Trust and Security in Peer-to-Peer System, in Security in Decentralized Data Management. Ting Yu and Sushil Jajodia (Eds). Springer Verlag.

Research Areas

I collaborate with a number other researchers from industry and universities. Most of these research projects are funded by NSF, Air Force Research Lab, Rome, NY, Industry, and University of Missouri system.

1. **Data Dissemination through Wireless Channels**

   This was NSF funded collaborative project with Southern Methodist University. The objective of this project is to investigate and develop efficient schemes for data dissemination on wireless channels. We have developed a dissemination scheme which integrates Push and Pull approaches to minimize latency and improve dissemination frequency. We call our system "Infospace" which uses "Data Staging" to provide continuous data availability. We have proposed and used the idea of "Surrogate" (a kind of mobile hardware cache) in "Infospace" to store current and future data requirements. We are in the process of integrating our system to web also. We have published a number of papers on Infospace, including a keynote talk.

2. **Mobile Database Systems (MDS)**

   This project was funded by NSF. The objective of the project is to design, develop, and implement a Mobile Database System (MDS) for managing M-commerce activities. A wireless platform offers a less restrictive environment for information management, however, this flexibility comes with unique problems related to data distribution, data types (location dependent and location independent), query types (location dependent, location aware, and location independent), and data caching and require new approaches for their management. In addition to this, a number of problems related to radio channel management make the situation more complex. All these issues must be resolved before the capability of MDS can be fully exploited. We have developed a new transaction model called "Mobilaction" for managing Location Dependent Data (LDD) and Location Dependent Queries (LDQ) efficiently. We have also developed a commit protocol called TCOT (Transaction Commitment on Timeout).

3. **Cybersecurity and Information Security**

   Cybersecurity has become a necessary component of today's information space. The cyberspace that we live in is not secured. We are developing new security approaches and solutions for mobile, wireless, and static systems. This work is funded by NSF.

Professional Activities and Services

Refereed Journals Activities

Editor-in-Chief:	- International Journal of Next Generation Computing - International Journal of Computer Science: Theory, Technology, and Applications.
Editorial board member:	Data and Knowledge Engineering.
Reviewer (partial list):	IEEE Transactions on Computers, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Mobile Computing, Performance Evaluation, Information Sciences, Journal of Parallel and Distributed Systems.
Guest Editor:	ACM SIGMOD Record, December 2003 and March 2004.
Guest Editor:	Mobile Networks and Applications, Vol. 9, No. 5, 2004, Kluwer and ACM.
General Co-Chair:	17th IEEE International Conference on Mobile Data Management, Porto, Portugal, June 13 - 16, 2016.
General Co-Chair:	1st IEEE International Conference on Computing, Communication and Security, December 4-5, 2015, Point Aux Piments, Mauritius.
PhD Forum Co-Chair:	16th IEEE International Conference on Mobile Data Management (MDM 2015), June 16-19, 2016, Pittsburgh, Pennsylvania, USA.
Industrial Track Chair:	15th IEEE International Conference on Mobile Data Management (MDM2014), July 15-18, 2014, Brisbane, Australia.
Program Co-Chair:	11th International Conference on Mobile Data Management 2010 (MDM 2010), May 23-26, 2010, Kansas City, Missouri, USA.
Program Co-Chair:	MUBICA07 Workshop in Conjunction with the 4th Annual International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MOBIQUITOUS 2007). August 6-10, 2007, Philadelphia, PA.
Organization member:	NSF funded workshop "MobiSensor", University of Pittsburgh, Pittsburgh, January 15-17, 2007.
Panel Chair:	The 7th International Conference on Mobile Data Management (MDM'06), May 9-13, 2016, Nara, Japan.
Workshop Chair:	The 2006 International Symposium on Applications and the Internet, (SAINT06), January 23-27, 2006, Phoenix, Arizona, USA.

General Co-Chair:	6th International ACM Workshop on Data Engineering for Wireless and Mobile Access (MobiDE 2007), June 10th, 2007, Beijing, China (in conjunction with <u>SIGMOD/PODS 2007</u>)
General Co-Chair:	Fourth International ACM Workshop on Data Engineering for Wireless and Mobile Access, June 12, 2005, Baltimore, Maryland (in conjunction with SIGMOD/PODS 2005)
General Chair:	International Conference on Distributed Systems and Internet Technology, 2005, Dec. 22-24, Bhubaneswar, India.
General Chair:	5th International ACM Workshop on Data Engineering for Wireless and Mobile Access (MobiDE 2006), June 25, 2006, Chicago, Illinois, USA (in conjunction with SIGMOD/PODS 20076).
Vice Chair:	IEEE ICDE 1999, Sydney, Feb. 1999, Australia.
Publication Chair:	IEEE ICDE, Feb. 2000, San Diego.
Workshop Chair:	3rd ACS/IEEE Int. Conf. On Comp. Systems and Applications (AICCSA05), Cairo, Egypt, Jan. 3-6, 05.
Dist. Sys. Track Chair:	Int. Conf. on Distributed Computing & Internet Technology (ICDCIT 2004), Bhubaneswar, India. Dec. 22-24, 04.
Steering Committee Member:	6th Int. DEXA 03 Workshop on Mobility in Databases and Dist. Sys. September 1-5, 2003 Prague, Czech Republic.
Publicity Chair:	3rd Int. ACM Workshop on Data Eng. for Wireless and Mobile Access (MobiDE03), San Diego, California. Sept. 19, 03
Seminar Co-Chair:	IEEE, ICDE 2003, Banglore, India. March 14-15, 03.
Int. Advisory Committee:	2nd Int. Conf. on Inf. Management, Indore, India. Oct. 21-23, 2003.
Proceedings Editor:	WECWIS workshop 2002, Newport Beach, California. June 26-28, 2002
General Chair:	Int. Workshop on Data Semantics in Web Inf. Sys. (DASWIS-2001), Yokohama, Japan. Nov. 29-30, 01
Co-Chair:	Workshop on Reliable and Secure Applications in Mobile Environment (IEEE SRDS'01), New Orleans. Oct. 28, 01
Co-Chair:	4th Int. Workshop on Mobility in DB & Dist. Sys., Munich, Germany. Sep. 3 - 7, 2001
Treasurer:	ACM Sigmod, Dallas. Feb. 2000.
Program Co-Chair:	ACM Computer Science Conference (CSC), March 3-5, 1992, Kansas City, MO.
Program Co-Chair:	ACM Symposium on Applied Computing (SAC), April 3-5, 1991, Kansas City, MO.

Program Committee Member

I have served and continue to do so as PC member to nearly all major ACM and IEEE conferences and also many international conferences.

Member Professional Organizations

- Senior member, ACM.
- Senior Member, IEEE.

NSF Panel: I have served on a large number of NSF panels and continue to do.

Consulting

- United Nations
  December 1992 - 1994. Country: India.
  Project: Transfer of Technology Through Expatriate Nationals (TOKTEN).
  Under this contract, I consulted the following institutions:
  a. University of Calcutta, Calcutta, India. Presented a one day tutorial and delivered an invited paper.
  b. Consulted Indian Statistical Institute researchers for further work on database area, India, 1993.
  c. Tata Iron and Steel Company (TISCO), Jamshedpur, India. Consulted Data Processing department for further improvement in their data management activities, India, 1993.
  d. Tata Refractories, Belpahar, India. Assisted in the installation of their data processing system, 1993.
  e. University of Puna and for Development of Advanced Computing, Pune, India. Gave a seminar on database system development process, 1993.
  f. University of Indore, Indore, India.
  g. Indian National Scientific Documentation, New Delhi, India.

- Sprint PCS, Kansas.
  May 1998 - May 1999.
  Project: Automatic Software Validation Workflow Systems.

- Cohen and Esrey Construction Inc.
  November 1998 - May 1999.
  Project: Intelligent Web Browser Design and Implementation.
- Shail Group Indistries, New Delhi, India. 2010 – Present.

Key Note/Invited Talks

Date   **Presentation**

This is a partial list of talks.

November 20, 2015   Invited Talk. Army Research Workshop on Emerging Cyber Techniques and Technologies, Florida International University, Miami, Florida.
December 20, 2014   Keynote Speech at EAIT 2014, Kolkata, India.
December 19, 2010   Keynote speaker. Computer Science Conference, Jammu, India.
September 2007   Identification of Malicious Activity. Georgia Tech.
October 2007   Management of Malicious Transactions in Mobile Database Systems, George Mason University.
December 2004   Keynote talk. 1st International Conference on Distributed Computing and Internet Technology (ICDCIT2004), December 21-24, Bhubaneshwar, India.
January 2004   Key note talk. 30-th Anniversary Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2004), Czech Republic.
December 2003   National Chiao-Tung University, Hsinchu, Taiwan Workshop on Pervasive Computing, December 18-19, 2003.
November 2002   Mobile Database Systems, Mokpo University, Seoul, South Korea.
January 2001   Mobile Database Systems, Indore University, India.
December 2000   Mobile Database Systems, MBT, Pune, India.
January 1998   Int. Conf. on Technical Education in 21st Century, Indore, India.
May 1996   Recovery in Main Memory Database Systems. Georgia Tech, Atlanta, Georgia.
December 1993   Transactions and its Management. University of Indore, Indore, India.
December 1993   Invited Paper: An Efficient Algorithm for Managing Concurrent Operations on Data Using Dynamic Attributes of Transactions. Int. Conf. on Management of Data (COMAD '93), Univ. of Calcutta, India.
December 1993   Transaction Management in Distributed Database Systems. University of Indore, Indore, India.
March 1989   Main Memory Database Systems. Korean Institute of Science and Technology, Seoul, South Korea.
December 1987   Role of Information Processing in Industrial organizations. Tata Iron and Steel Company, Jamshedpur, India.
December 1987   Database Management Systems and Management Science (two days). National Productivity Council, New Delhi, India.
December 1987   DBMS: Its importance in the management of companies. Xavior Institute of Management, Jamshedpur, India.
April 1986   Performance of Two-phase and Timestamp based CCMs. Computer Corporation of America, Cambridge, MA.
March 1984   Performance of Database Concurrency Control Mechanisms. Case Western Reserve University, Cleveland, Ohio.

| July 1982 | Serialization of Concurrent Transactions in Database Systems. NATO Summer School on Computer Systems, Bonas, France. |

Conference Tutorials and Technical Seminars (A partial list of talks)

Date	Tutorial/Technical Seminars
January 5-7, 2008	A Two-day tutorial on Mobile Database Systems, NIT Hamirpur, Himachal Pradesh, India.
December 2007	Management of Transactions on Mobile Database Systems, 15th International Conference on Advanced Computing & Communication (ADCOM 2007) December 18 - 21 2007, Guwahati, India.
March 2003	Technical seminar on Mobile Database Systems, IEEE, ICDE03, March 14-15, 2003, Banglore, India.
January 2000	One week seminar on database systems. IBM ACE Indore, India.
December 2000	Tutorial on Mobile Databases. COMAD00, Pune, Dec. 14-15, 2000, India.
December 1995	Distributed Databases and Client-Server Architecture. Pre-VLDB '96 tutorial, Jamshedpur, India.
December 1995	Database Design: From ER to Relational. International Conference on Automation, Indore, India.
December 1993	Distributed Databases with Client/Server Architecture. 5th Int. Conf. on Management of Data, Calcutta India.
September 1993	Distributed Database and Client/Server Architecture. IEEE 7th Int. Conf. on Comp. Software and Applications, Tempe, Arizona.
March 1992	Distributed Database Management Systems. IEEE International Phoenix Conference on Computers and Communications.
March 1988	Main Memory Databases: A New Concept in Database Processing. National Conf. of Decision Sc. Institute, Las Vegas.

Vijay Kumar, University of Missouri-Kansas City

RESEARCH SUPERVISION AND TEACHING

Ph. D. Advisor

Graduated

Name	Research Area	Degree
Debopam Acharya	Wireless Data Dissemination	Ph. D. (June 2006)
Nitin Prabhu	Mobile Database Systems	Ph. D. (July 2006)
Francisco Landeras	Adaptive Query Processing	Ph. D. (December 2010)
Amol Khedkar	Self-Synchronization of Moving Objects	Ph. D. (December 2015)
Chetan Jaiswal	Cloud Computing	Ph. D. (May 2016)

Active

Name	Research Area	Degree
M. Maheshnath	Firewall Security (plan to graduate in Dec. 2017)	Ph. D.

MS Advisor
Graduated

Student name	Degree	Year	Thesis title
Ryan Linneman	MS	2015	Dynamic Merging in Relational Databases
Kushal Lal	MS	2014	Electrical Grid Management
Abhiruchi Singh	MS	2011	Identification of Malicious Transactions in MDS (Active).
Ramadevi Raghwan	MS	2011	Information Security (Active).
Vinit Nagda	MS	2003	Denial of Services in Wireless Network.
Kelly Kern	MS	2003	Medical Informatics.
Shalini Pradhan	MS	2003	Enhanced UML for Protein database design.
Shashidhar Gadiraju	MS	2003	Mobile recovery with Mobile Agents.
Pradeep Kumar	MS	2003	Leader Election in Ad-Hoc Network.
D. Dinakarpandian	MS	2002	Protein Database System.
Pravin Vajirkar	MS	2000	Data Warehouse Data Quality.
Vinode Vulupala	MS	2000	Mobile IP.
Kiran Chelluri	MS	1999	Data Warehouse Cleaning and Tuning.
Kalpana Dash	MS	1999	Transaction Management in Mobile Computing.
Amol Kher	MS	2000	MUNSHI: A Server Side Bookmarking System.
Shyam Selvarajan	MS	1999	Binary Coded Indexing scheme for Data Warehouse.
Sanjit Memnon	MS	1999	Caching in Mobile Databases.
Sunil Samtani	MS	1998	View Maintenance in Data Warehouse.
Prem Satish Makkena	MS	1997	Workflow Management Systems (ETM).
Girija Chavala	MS	1995	Perf. Measurement of Dist. Mutual Exclusion Algorithms.
Narayan Gaddipatti	MS	1994	Performance Measurement of KRISHNA and WDL CCMs.
Chayanika Majumdar	MS	1993	A CCM for IBGF organization and its Performance.
Phil Costantinou	MS	1993	Design and Implementation of a Research RDB.
Shawn Moe	MS	1993	Performance of Database Recovery Algorithms.
Mike Briley	MS	1993	Object Version Management.

Sudha Antani	MS	1992	Perf. of Undo-Redo and Undo-Noredo algorithms.
Judy Mullins	MS	1992	An IDS with multiple access paths and its performance.
Albert Burger	MS	1991	Performance of Multi-version distributed CCMs.
Margaret Easter	MS	1991	Design and Analysis of CCM for Distributed EH.
Lingling Polican	MS	1989	Design and Performance of a CCM for EH.
Angela Smith	MS	1985	Performance of a Primary Copy CCM. (Cleveland State).
Robert Cook	MS	1985	Natural Language Interface for UNIX. (Cleveland State).
Susan Penn	MS	1984	RDMS Natural language preprocessor (Cleveland State).

Member Supervisory Committees

Ph.D.	MS
Changhui Park	Upkar Varshney
Dzingrai Morabadoro	Yun-Heh Chen
Saurish Dasgupta	Rudy Rojas
Tuanjie Tong	Hung-Yu Lin
Yongqiao Xiao	Douglas Adams
Qun Ren (SMU)	
Woody Acosta	
Qing Hu	
Hung-Yu Lin	
Upkar Varshney	
Leijian Liu	
Yongnan Xu	
Fa Toh Yap	
Robert Cotter	

New Courses (Graduate and Undergraduate) Developed and Taught

Number	Name	Level	Date
CS5573	Information Security and Assurance	Graduate	2010
CS490	Introduction to Bioinformatics	Undergraduate	2002
CS470	Introduction to Database Management Systems	Undergraduate	1986
CS471	Database Design, Implementation and Validation	Undergraduate	1999
CS5572	Mobile Computing	Graduate	1997
CS5570	Advanced Database Management Systems	Graduate	1988
CS5571	Distributed Database Management Systems	Graduate	1989

Courses Taught

Number	Name
CS670	Distributed Database Systems
CS5573	Information Security and Assurance
CS5572	Mobile Computing
CS5570	Advanced Database Systems
CS5531	Advanced Operating Systems
CS500	Advanced Pascal

CS490   Introduction to Bioinformatics
CS471   Database Design, Implementation and Validation
CS470   Introduction to Database Systems
CS431   Introduction to Operating Systems
CS430   Programming Languages
CS423   Client/Server Systems and Programming
CS421   Data Communication
CS325   Introduction to Data Structures and Algorithms
CS101   Introduction to Computing
CS100   Introduction to Pascal

Administrative Responsibilities and Committee Membership (past and present)

Director: International Academic Collaboration Program

Coordinator (Head): Ph. D. Discipline Computer Science. I served on this committee from 1992-2013.

Committee Name (Past and Present)	Level	Position
Promotion & Tenure	Campus	Member
Post Tenure Evaluation	School	Chair
Promotion & Tenure	School and Department	Chair and/or member
PhD Executive committee	Campus (99-02, 05-07)	Member
Coop Committee	University	Chair
Academic appeal committee	School	Chair
Master Committee	Department	Member
Resource committee	School	Member
Dean Search Committee	University	Member
Faculty Search Committee	School	Member and Chair
UMRB	UM System (2009-2012)	Member
CSEE Seminar Series	School	Chair