

**CHINYA V. RAVISHANKAR**  
Marlan and Rosemary Bourns College of Engineering  
The University of California—Riverside, Riverside, CA 92521  
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## EDUCATION

**Ph.D., Computer Sciences**, University of Wisconsin–Madison, 1987.

**M.S., Computer Sciences**, University of Wisconsin–Madison, 1986.

**B.Tech., Chemical Engineering**, Indian Institute of Technology (IIT), Bombay.

## RESEARCH INTERESTS

Databases, Security, Computer Systems.

## POSITIONS HELD

- **Associate Dean** (7/04 to present), Bourns College of Engineering, University of California, Riverside.
  - 2015–present: Associate Dean for Graduate Education & Research.
  - 2004–2015: Associate Dean for Undergraduate Education.
- **Professor** (9/99 to present), Dept. of Computer Science and Engineering, University of California, Riverside.
  - Associate Director, Center for Research in Intelligent Systems
- **Research Professor** (9/96–9/99), EECS Department and The Information Technology Division, the University of Michigan–Ann Arbor.
- **Visiting Associate Professor** (9/97–9/98), Business School, the University of Michigan–Ann Arbor.
- **Associate Research Professor** (1991–9/96), EECS Department and the Information Technology Division, the University of Michigan–Ann Arbor.
- **Assistant Professor** (1986 to 1991), Electrical Engineering and Computer Sciences Department, University of Michigan–Ann Arbor.
- **Lecturer** (1983–1986), **Teaching/Research Assistant** (1980–1983), Computer Sciences Department, University of Wisconsin–Madison.
- **Systems Programmer** (1977–1979), Computer Center, Indian Institute of Technology, Bombay. Designed and implemented major portions of IITFORT—a diagnostic FORTRAN compiler.

## PATENTS

*System for Promoting Student Success and Projecting Course Enrollments*, US patent application, filed April 2, 2016.

*Data Compression and Encryption System and Method Representing Records as Differences Between Sorted Domain Ordinals that Represent Field Values*, Wee Keong Ng and Chinya V. Ravishankar, U.S. Patent #5,678,043, October 1997.

*Data Compression System and Method Representing Records as Differences Between Sorted Domain Ordinals Representing Field Values*, Wee Keong Ng and Chinya V. Ravishankar, U.S. Patent #5,603,022, February 1997.

## CONTRACTS & GRANTS

1. “Discovering Hidden Semantics from Spatiotemporal Sensed Data”, National Science Foundation, \$500,000, 2015–2018, co-PI with Vassilis Tsotras.
2. “CPS: Synergy: Distributed Sensing, Learning, and Control in Dynamic Environments”, National Science Foundation, \$1,000,000, 2013–2016, Co-PI with A. Roy-Choudhury, M. Campbell, B. Bhanu.
3. “Enhancing STEM Transfer and Success Through the STEM Pathways Program”, U. S. Department of Education, Sole PI, \$3,928,495, 2011-2016.
4. “SPRITE: Success Programs for Retention In Technology and Engineering”, National Science Foundation, \$599,998, Sole PI, 5/1/2009–4/30/2016.
5. “Success Partnerships for Increasing Recruitment into Technology (SPIRIT)”, National Science Foundation, \$100,000 (Lead PI, with M. Princevac, S. Walker, V. Rodgers as co-PIs), 11/1/08–10/31/09.
6. “UCR STEM Pathway Project”, U.S. Department of Education, \$4,078,873, co-PI with J. Sandoval, G. Scott, and D. Fairris (Lead PI), 2008–2010.
7. “Aware Building: Secure Infrastructures for On-Demand Perceptible Services”, Office of Naval Research, \$2,302,000, (Lead PI, with M. Matsumoto co-PI), 10/07–10/13.
8. MESA Schools Program, UC Office of the President, \$2,023,355 2006-2014, sole PI.
9. “CRI: Outdoor Video Sensor Network Laboratory”, National Science Foundation, \$250,514 (co-PI with E. Tuncel and B. Bhanu, PI), 3/1/06–2/28/09.
10. “Security for Mobile Sensor Systems”, MICRO Program, University of California, \$57,783, 9/05–9/06.
11. “Secure, Mobile Embedded and Sensor Systems”, \$468,000, Tata Consultancy Services, (Lead PI, with co-PI S. Tripathi), 04/2003–04/2006.
12. “Determining Interference Patterns Among Concurrent Processes”, \$50,000, Unisys Corp., (Lead PI, with Eamonn Keogh, co-PI).
13. “SWIFT: Secure Wireless Fault-tolerant Tunable Networks” \$2,496,587, (Lead PI, co-PIs: S. Krishnamurthy, M. Faloutsos, S. Tripathi), Defense Advanced Research Projects Agency, 7/01–7/04.
14. “Handling Uncertainty in Dynamic Databases” \$300,000, (Co-PI, with B. Bhanu), National Science Foundation, 9/01–9/04.
15. “Technologies for Data management and Content Delivery” \$962,000 (\$462,000 cash + \$500,000 in-kind), Tata Consultancy Services, Lead PI (co-PIs: M. Faloutsos, M. Molle, S. Tripathi,) 4/00-4/03.
16. “Infrastructure Support for Network-Based Content Delivery” \$233,405, Lead PI (co-PIs: M. Molle, M. Faloutsos, S. Tripathi), Digital Media Innovations Program, University of California, 2/01–2/03.
17. “Software Support for Access, Browsing, and Interpretive Analysis of Large, Cross-Disciplinary Data Sets”, (Sole PI) \$1,290,836, National Aeronautics and Space Administration, subcontract for Socioeconomic Data Archive Center, The Consortium for International Earth Science Information Networking, 1994-1999.
18. “Implementation of SNMP-Based Network Management for MBONE” (co-PI: A. Rubens, Merit Network, Inc.), \$271,046, National Science Foundation Grant Number NCR-9417032, 11/1/94–1/31/96.
19. “Advanced Information Technology Issues in Global Environmental Change Research”, (sole PI) \$612,972, National Aeronautics and Space Administration, subcontract, Socioeconomic Data Archive Center, Consortium for International Earth Science Information Networking, 1/1/1992–6/30/1995.
20. Intel Corporation, \$100,000 in equipment in support of work in Electronic Commerce and Data Warehousing, December 1997.
21. AT&T Inc., \$246,700 in equipment, June 1989.

22. “An Integrated Approach to Real-Time Systems” (co-PI, with Kang G. Shin and Pinaki Mazumder), 3-year total of \$477,579.00, Office of Naval Research, 1988.
23. IBM Canada, Inc., \$87,000 for research in Distributed Computing, 1990–1993.
24. Bell Northern Research Inc., \$20,000 for research in distributed computing, 1988.
25. “Parallel Computing with Object-Oriented Languages”, \$8950, Rackham Research Grant, 1988.
26. First Distinguished Lecturer Series in Computer Science & Engineering, \$10,000, Unisys, 1989.

## PHD STUDENTS GRADUATED

1. Yordanos Beyene, “A Systematic Approach for Understanding and Modeling the Performance of Network Security Devices”, August 2014. *Employment*: Hewlett Packard, Inc.
2. Jonathan Dautrich, “Achieving Practical Access Pattern Privacy in Data Outsourcing”, June 2014. *Employment*: Google, Inc.
3. Peng Wang, “Security and Privacy in Search Services”, June 2014, *Employment*: Google, Inc.
4. Reaz Uddin, “Identifying Interesting Behaviors from Moving Object Trajectories”, March 2014. *Employment*: Microsoft, Inc.
5. Dhananjay Kulkarni, “Techniques for Query Optimization, Scheduling, and Load-shedding in Data Stream Management Systems”, December 2007. *Employment*: Assistant Professor, Boston University.
6. Wei Wang, “Energy-Efficient Information Dissemination Schemes in Wireless and Mobile Environments”, March 2007.
7. Saugat Majumdar: “A Framework for Designing Signature Schemes Secure for Short Passwords”, December 2006. *Employment*: Hewlett Packard Corp.
8. Sandeep Gupta: “External Memory Algorithms for Shortest-Distance and Spatio-Temporal Queries on Road Networks”, August 2006. *Employment*: San Diego Supercomputer Center.
9. Li Zhou: “Message Confidentiality and Authenticity in Dynamic Peer Groups and Wireless Sensor Networks”, August 2006. *Employment*: E-Bay, inc.
10. Shanzhong Zhu: “Managing Erratic Data Streams in Distributed Environments”, August 2006. *Employment*: IAC Search & Media.
11. Jinfeng Ni: “Spatial and Spatio-temporal Queries in the Presence of Uncertainty and Movement”, August 2006. *Employment*: IBM.
12. Nigel Hinds: “Managing Metadata for Distributed Information Servers”, August 1999, *Employment*: IBM T. J. Watson Research Center.
13. David G. Thaler, “An Architecture for Inter-Domain Network Troubleshooting”, January 1998. *Employment*: Microsoft Research Center, Microsoft Corporation.
14. Ming-Ling Lo: “Support for Efficient Spatial Join Operations”, March 1996. *Employment*: T. J. Watson Research Center, IBM Corporation.
15. Wee-Keong Ng: “Compression and Recycling for Statistical Databases”, April 1996. *Employment*: Assistant Professor, Nanyang Technological University, Singapore.
16. Yen-Min Huang: “Constructive Specification and Synthesis of Agents for Custom- and Cross-RPC”, December 1993. *Employment*: IBM Research Triangle Park, NC.
17. Yilin Zhao: “Theoretical and Experimental Studies of Mobile-Robot Navigation”, December 1991 (Co-chaired with S. BeMent). *Employment*: Motorola, Inc.
18. Rong, N. Chang: “A Service-Acquisition Mechanism for the Client-Service Model in Cygnus”, October 1990. *Employment*: Manager, T. J. Watson Research Center, IBM Corporation.

## MASTERS PROJECTS SUPERVISED

- Jan Paeschke (1987, Programming Languages)
- Sami Shaio (1988, Hypertext Systems)
- Margie Morris (1988, Distributed Systems)
- Aruna Victor (1989, Distributed Systems)
- Hsiu-Ying Hsu (1990, Distributed Systems)
- I-Wen Hsiung (1990, Distributed Systems)
- Eugene Walden (1990, Real-Time Systems)
- Paul Dodd (1991, Real-Time Systems)
- Niranjana Ramakrishnan (1996, Database systems)
- Monal Sonecha (1996, Database Systems)
- Christopher Holtz (1997, Manufacturing software)
- Alok Prasad (1998, Data warehousing)
- Shige Wang (1999, Manufacturing Software)
- Chito Shiu (1999, Manufacturing Software)
- Zizhen Yao (2000, Web Caching)
- Baouye Hu (2001, Content Delivery)
- Shanzhong Zhu (2001, Content Delivery).
- Rui Jiang (2002, Wireless Networking)
- Daniel Berger (2004, Security)
- Anup Mayank (2004, Networking)
- Varun Kohli (2005, Operating Systems)
- Siddharth Dixit (2005, Networking)
- John P. Jones (2005, Security)
- Jessica Browndus (2011, Security)

## TEACHING & CURRICULUM DEVELOPMENT

### At The University of California–Riverside:

1. CS 265, *Computer Security (graduate)*.
2. CS 236, *Advanced Database Management Systems (graduate)*.
3. CS 202, *Advanced Operating Systems (graduate)*.
4. CS 164, *Computer Networking (undergraduate)*.
5. CS 165, *Introduction to Computer Security (undergraduate)*.
6. CS 166, *Introduction to Database Management Systems (undergraduate)*
7. CS 181, *Programming Languages (undergraduate)*.

### **At The University of Michigan:**

Fully revamped the out-of-date Software Curriculum at the UM between 1986–1989.

1. EECS 582, *Advanced Operating Systems* (new course)
2. EECS 483, *Compiler Construction* (new course)
3. EECS 485, *Programming Languages* (new course)
4. EECS 482, *Introduction to Operating Systems* (new course)
5. EECS 682, *Collaboration Systems*
6. EECS 380, *Data Structures and Algorithms*
7. EECS 598, (now EECS 684, *Research Topics in Database Systems*)
8. CIS 340, *Design and Use of Databases* (School of Business Administration)
9. CIS 342, *Modern Information Networks* (School of Business Administration)

### **At The University of Wisconsin–Madison:**

10. CS 212 and CS 302, *Introduction to Programming*
11. CS 467, *Data Structures*
12. CS 586, *Programming Languages*

### **SERVICE CONTRIBUTIONS**

*Contributions below are in addition to the contributions made in my role as Associate Dean of the Bourns College of Engineering, 2004–present.*

#### **Contributions at the University of California–Riverside:**

- Special Advisoer to the Provost on Accreditation, 2018–present.
- Business Undergraduate Degree Review Committee, 2017–2018.
- Deferred Maintenance Ad-hoc Committee, 2016–2017.
- Academic Facilities Renovations Task Force, 2016–present.
- Member, Transportation and Parking Services Advisory Committee, 2017–present.
- Member, Multidisciplinary Research Building–II Design Working Group, 2016–present.
- Member, Multidisciplinary Research Building–I Design-Build Bridging Working Group, 2015–present.
- Member, Steering Committee, UCR Cluster Hiring Initiative, 2015–present.
- Member, UCR WASC Accreditation Advisory Committee, 2014–present.
- Member, UCR’s University Innovation Alliance Team 2014–2015.
- Member, UCR Advisory Committee on STEM Outreach Initiatives 2012–present.
- Member, UCR Workgroup on Managing Course Demand, 2010–2014.
- Member, UCR Strategic Committee on On-Line Education, 2013.
- Member, UCR Committee on Success and On-Time Graduation, 2013.
- Member, Search Committee, Anderson Graduate School of Management, 2008.
- Member, Campus Task Force on Mathematics Education, 2007–2009.
- Member, Executive Committee, Univ. of California Microelectronics Innovation and Computer Research Opportunities program, 2006–2010.

- Member, Dean Search Committee for the Anderson Graduate School of Management, 2006.
- Member, Executive Committee, The Bourns College of Engineering, 2004-present.
- Member, Committee on Preparatory Education, 2004–2015.
- Member, Executive Committee, Univ. of California Discovery Program, 2001-2005.
- Member, Search Committee, UCR Vice Chancellor for University Advancement, 2002-2003.
- Member, Campus Design Review Board, 2002-2003
- Chair, CS&E Faculty Search Committee, 2002–2003
- Member, Committee on Committees, 2000-2002.
- Member, CS&E Faculty Search Committee, 2001–2002
- Chapter Advisor, ACM Student Chapter, UCR, 2000-2001
- Chair, CS&E Faculty Search Committee, 2000–2001
- Member, EE Faculty Search Committee, 2000–2001
- Engineering Building II Planning Committee, 2000-2002
- Chair, CS&E Faculty Search Committee, 1999–2000
- CSE Curriculum Committee, 1999-2000
- Established the Distinguished Lecture Series, 2000

#### **Contributions at the University of Michigan–Ann Arbor:**

- Established the Software Systems Research Laboratory, 1989
- Established the Distinguished Lecturer Series in CSE, 1989
- Chairman, Computer Science Seminars, 1989
- Executive Committee, Computer-Aided Engineering Network: 1988–1990
- Executive Committee, Computer Science & Engineering: 1989–1990
- Faculty Search Committee, Computer Science & Engineering: 1986–1988
- Committee on CSE Undergraduate Curriculum, 1991
- Computing Policies Committee: 1986–1988
- Computing Needs Committee: 1986–1987

#### **PROFESSIONAL ACTIVITIES**

- Senior Program Committee, ACM Conference on Information and Knowledge Management, 2013 (CIKM'2013).
- Technical Program Committee, SESA-2012, Workshop on Sensor Enabled Situational Awareness (with the 13th International Conference on Distributed Computing and Networking).
- Technical Program Committee, SESA-2011, Workshop on Sensor Enabled Situational Awareness (with the 12th International Conference on Distributed Computing and Networking).
- Technical Program Committee, SSTDM-10, the IEEE/ICDM International Workshop on Spatial and Spatiotemporal Data Mining.
- Technical Program Committee, ICPADS-2010, International Conference on Parallel and Distributed Systems.
- Technical Program Committee, ICDE-2010, the IEEE International Conference on Data Engineering.
- Technical Program Committee, SSTDM-2009, the ICDM International Workshop on Spatial and Spatiotemporal Data Mining.

- Technical Program Committee, International Conference on Mobile and Ad-Hoc Networking, 2007 (MSN'07).
- Technical Program Committee, IEEE Global Telecommunications Conference 2007 (GLOBECOM 2007), Washington DC, USA
- Program Committee, ACM Conference on Information and Knowledge Management, 2007.
- Review Committee, Annual Computer Security Applications Conference, 2006.
- Program Committee, International Conference on Mobile Ad-hoc and Sensor Networks, 2006.
- Program Committee, 11th International Conference on Management of Data, Goa, India, 2004.
- Editor-in-Chief Search Committee, IEEE Trans. on Knowledge & Data Engineering, 2004.
- Technical Program Committee, IEEE Infocom 2004.
- Workshop Chair, Pacific Area Knowledge & Data Discovery Conference, Sydney, Australia, 2004.
- Technical Program Committee, SEKE 2003 International Workshop on Data Mining for Software Engineering and Knowledge Engineering, San Francisco, July 2003.
- Guest Editor (with Sibel Adali), Multimedia Tools and Applications, An International Journal, Kluwer Publishers, Special Issue, December 2004 (selected papers from MIS 2001).
- Technical Program Committee, Workshop in Wireless Security (WiSE 2003).
- Associate Editor, IEEE Transactions on Knowledge and Data Engineering, IEEE Press, 1999-2003.
- Program Committee, International Conference on Very Large Databases, Hong Kong, 2002
- Program Committee, Multimedia Information Systems, 2002
- Program Committee, 10th International Conference on Management of Data, Pune, India, 2000.
- Program Committee, IEEE International Conference on Data Engineering, Bangalore, India, 2003.
- Program Committee, ACM SIGMOD'99, International Conference on Management of Data, Philadelphia, PA, May 1999.
- Program Committee, ACM First International Conference on Data Warehousing and On-Line Analytical Processing, Washington D.C., November 7, 1998.
- Program Committee, Ninth International Conference on Scientific and Statistical Databases, 1997.
- Program Committee, Fifth International Symposium on Large Spatial Databases, 1997.
- Program Committee, 10th International Conference on Distributed Computing Systems, 1990.
- Review Committee, History of Programming Languages Conference, 1994.
- Reviewer for IEEE Transactions on Software Engineering, IEEE Transactions on Parallel & Distributed Systems, IEEE Transactions on Computers, IEEE Transactions on Knowledge & Data Engineering, and numerous other journals and conferences. Also, reviewer for National Science Foundation, DARPA, AFOSR, ONR, and the National Sciences and Engineering Research Council of Canada.

## PROFESSIONAL RECOGNITION AND MEMBERSHIPS

*Best Paper*, 5th ACM Conference on Data and Application Security & Privacy, San Antonio, TX.

*Best Student Paper*, 13th IEEE International Conference on Mobile Data Management.

Senior Member, Institute of Electrical and Electronics Engineers.

Member, Association for Computing Machinery.

Member, American Association for the Advancement of Science

## PUBLICATIONS

### Books and Book Chapters:

1. Chinaya Ravishankar, *Sons of Sarasvatī: Late Exemplars of the Indian Intellectual Tradition* (500 pp.), State University of New York Press, September 2018.
  - Indian edition appeared in Hedgehog and Fox Academic Monograph series, Permanent Black Publishers, Delhi, April 2017.
2. B. Bhanu, C. V. Ravishankar, A. K. Roy-Chowdhury, H. Aghajan, D. Terzopoulos (Eds.), “Distributed Video Sensor Networks”, Springer Verlag, 2011.
3. “VideoWeb Dataset for Multi-camera Activities and Non-verbal Communication”, Giovanni Denina, Bir Bhanu, Hoang Thanh Nguyen, Chong Ding, Ahmed Kamal, Chinaya Ravishankar, Amit Roy-Chowdhury, Allen Ivers, Brenda Varda, In: Bhanu B., Ravishankar C., Roy-Chowdhury A., Aghajan H., Terzopoulos D. (eds) Distributed Video Sensor Networks. Springer, London, 2011.
4. S. Gupta and C. V. Ravishankar, “Spatio-Temporal Queries on Road Networks: Coding-based Methods”, Encyclopedia of GIS, pp. 1122-1125, Springer Verlag, 2007.
5. Wee-Keong Ng, Sunghyun Choi, and C. V. Ravishankar, “Lossless and Lossy Compression”, Book Chapter, *Evolutionary Algorithms in Engineering Applications*, D. Dasgupta and Z. Michalewicz, Springer Verlag, 1997, pp. 174–188.
6. P. Dodd and C. V. Ravishankar, in *Monitoring and Debugging of Distributed Real-Time Systems*, J. P. Tsai and J. H. Yang, (Eds.), IEEE Press, 1995.

### Papers in Refereed Journals:

7. Jonathan Duatrich and C. V. Ravishankar, “Inferring Insertion Times and Optimizing Error Penalties in Time-Decaying Bloom Filters”, ACM Transactions on Database Systems, Vol. 44, No. 2, Article 7, March 2019.
8. P. Wang and C. V. Ravishankar, “Hierarchical Policy Delegation in Multiple-Authority ABE”, International Journal of Information and Computer Security, pp. 140-159, vol. 7, No. 2/3/4, 2016, Inderscience Publishers.
9. P. Wang and C. V. Ravishankar, “Key Foisting and Key Stealing Attacks in Sensor Networks”, International Journal of Sensor Networks, pp. 111-126, vol. 22, No. 2, 2016, Inderscience Publishers.
10. Jenn-Long Liu and Chinaya V. Ravishankar, “LEACH-GA: Genetic Algorithm-Based Energy-Efficient Adaptive Clustering Protocol for Wireless Sensor Networks,” International Journal of Machine Learning and Computing vol. 1, no. 1, pp. 79-85, 2011.
11. Jinfeng Ni, Li Zhou, and C. V. Ravishankar, “Dealing With Selective and Random Attacks in Wireless Sensor Networks”, *ACM Transactions on Sensor Systems*, vol. 6, issue 2, February 2010.
12. Wei Wang and C. V. Ravishankar, “Hash-based Virtual Hierarchies for Scalable Location Service in Mobile Ad-hoc Networks”, *Mobile Networks and Applications*, Springer Verlag, vol. 14, no. 5, 2009.
13. Sandeep Gupta, Jinfeng Ni, and C. V. Ravishankar, “Efficient Data Dissemination Using Locale Covers”, *Pervasive and Mobile Computing*, Elsevier Publishers, 4(2): 254–275 (2008).
14. Wei Wang and C. V. Ravishankar, “Adaptive Broadcasting for Similarity Queries in Wireless Content Delivery Systems”, *IEEE Transactions on Knowledge and Data Engineering*, 20(4): 504-518 (2008).
15. Shanzhong Zhu, Wei Wang, and C. V. Ravishankar, “PERT: A New Power-Efficient Real-Time Packet-Delivery Scheme for Sensor Networks”, *International Journal of Sensor Networks*, Inderscience Publishers, 3(4): 237–251 (2008).



16. Jinfeng Ni and C. V. Ravishankar, "Indexing Spatiotemporal Trajectories with Efficient Polynomial Approximations", *IEEE Transactions on Knowledge and Data Engineering*, Vol 19, no. 5 (2007), pp. 663–678.
17. R. Li, B. Bhanu, C. Ravishankar, M. Kurth and J. Ni, "Uncertain spatial data handling: modeling, indexing and query," *Computers and Geosciences*, Vol. 33, No. 1 (2007).
18. A. Mayank and C. V. Ravishankar, "Supporting Mobile Device Communications in the Presence of Broadcast Servers", *International Journal of Sensor Networks*, Vol. 2, no. 1–2, 2007, pp. 9–16.
19. S. Kopparty and C. V. Ravishankar, "A Framework for Pursuit-Evasion Games in  $\mathbb{R}^n$ ", *Information Procession Letters*, Vol. 96, No. 3 (Nov. 2005), pp. 114–122.
20. Wei Biao Wu and C. V. Ravishankar, "The Performance of Difference Coding for Compressing Sets and Relations", *Journal of the Association for Computing Machinery*, Vol. 50, No. 5, 2003, pp. 665–693.
21. David Thaler and C. V. Ravishankar, "An Architecture for Network Diagnosis and Repair", *Journal of Network and Systems Management*, Vol. 12, No. 2 (June 2004).
22. David Thaler and Chinya. V. Ravishankar, "Using Name-Based Mappings to Increase Hit Rates", *IEEE/ACM Transactions on Networking*, Vol. 6(1), pp. 1–14 (Feb. 1998).
23. Yen-Min Huang and C. V. Ravishankar, "Constructive Protocol Specification Using Cicero", *IEEE Transactions on Software Engineering*, Vol. 24(4), pp. 252–267 (April 1998).
24. Ming-Ling Lo and C. V. Ravishankar, "The Design and Implementation of Seeded Trees: An Efficient Method for Spatial Joins", *IEEE Transactions on Knowledge and Data Engineering*, Vol. 10(1), pp. 136–154 (January 1998).
25. Wee-Keong Ng and C. V. Ravishankar, "Block-Oriented Compression Techniques for Relational Databases", *IEEE Transactions on Knowledge and Data Engineering*, Vol. 9(2), pp. 314–328 (Apr. 1997).
26. David Thaler and C. V. Ravishankar, "Distributed Center Location Algorithms", *IEEE Journal on Selected Areas in Communications*, Vol. 15(3), pp. 291–303 (April 1997).
27. Huang, Yen-Min and C. V. Ravishankar, "Secure Synthesis and Activation of Protocol Translation Agents", *Distributed Systems Engineering Journal*, IEE and the British Computer Society, 4(4) pp. 191–202, (December 1997).
28. Yen-Min Huang and C. V. Ravishankar, "URPC: A Toolkit for Prototyping Remote Procedure Calls", *The Computer Journal*, British Computer Society, Oxford University Press, Vol. 39(6), 1996, pp. 525–540.
29. Kevin J. Compton and C. V. Ravishankar, "Expected Deadlock Time in a Multiprocessing System", *Journal of the ACM*, May 1995, pp. 562–583.
30. Yen-Min Huang and C. V. Ravishankar, "Designing an Agent Synthesis System for Cross-RPC Communication", *IEEE Transactions on Software Engineering*, Vol. 20(3), pp. 188–198 (March 1994).
31. Rong N. Chang and Ravishankar, C. V., "A Service Acquisition Mechanism for Server-Based Heterogeneous Systems", *IEEE Transactions on Parallel and Distributed Systems*, Vol. 5(2), pp. 154–169 (February 1994).
32. Yilin Zhao, Ravishankar, C. V., and BeMent, S., "Coping with Memory and Bandwidth Limitiations in Mobile Robot Systems", *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 24(1), pp. 58–72 (January 1994).
33. Paul Dodd and Ravishankar, C. V., "Monitoring and Debugging Real-Time Systems", *Software–Practice and Experience*, Vol. 22(10), pp 863–877 (October 1992).
34. Basu, S., Radhakrishnan, P., Ravishankar, C. V., "Studies on the development of a wearable artificial-kidney machine (WAKM)", *Artificial Organs* 11:(4) August 1987.

## Papers in Refereed Conferences:

35. Reaz Uddin, China V. Ravishankar, Vassilis Tsotras, "Indexing Moving Object Trajectories with Hilbert Curves", Proc. 26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Seattle, WA, November 2018 (Poster).
36. Reaz Uddin, Michael Rice, China V. Ravishankar, Vassilis Tsotras, "Assembly Queries: Planning and Discovering Assemblies of Moving Objects Using Partial Information", Proc. 25th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Redondo Beach, CA, November 2017.
37. Jonathan Dautrich and China V. Ravishankar, "Tunably-Oblivious Memory: Generalizing ORAM to Enable Privacy-Efficiency Tradeoffs", Proc. Fifth ACM Conference on Data and Application Security and Privacy, San Antonio, TX, March 2-5, 2015. *Best Paper award.*
38. Jonathan Dautrich and China V. Ravishankar, "Combining ORAM with PIR to Minimize Bandwidth Costs", Proc. Fifth ACM Conference on Data and Application Security and Privacy, San Antonio, TX, March 2-5, 2015.
39. Peng Wang and China V. Ravishankar, "On masking topical intent in keyword search", Proc. 30th International Conference on Data Engineering (ICDE 2014), Chicago, IL, March 2014.
40. Peng Wang and China V. Ravishankar, "Secure and Efficient Range Queries on Outsourced Databases Using  $R$ -trees", Proc. 29th International Conference on Data Engineering (ICDE 2013), Brisbane, Australia, April 2013.
41. Jonathan L. Dautrich and China V. Ravishankar, "Inferential Time-Decaying Bloom Filters", Proc. of the 16th International Conference on Extending Database Technology (EDBT 2013), Genoa, Italy, March 2013.
42. Jonathan L. Dautrich and China V. Ravishankar, "Compromising Privacy in Precise Query Protocols", Proc. of the 16th International Conference on Extending Database Technology (EDBT 2013), Genoa, Italy, March 2013.
43. Jonathan L. Dautrich and China V. Ravishankar, "Security Limitations of Unsecured Secret Sharing for Data Outsourcing", 25th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy, Paris, France, July 16-18, 2012, pp. 145-160.
44. Md. Reaz Uddin, China V. Ravishankar, Vassilis J. Tsotras, "On-line Identification of Dwell Regions for Moving Objects", 13th International Conference on Mobile Data Management, Bengaluru, India, July 23-26, 2012, pp. 248-257. *Best Student Paper award.*
45. Peng Wang and China V. Ravishankar, "Foisting and Stealing of Keys in Sensor Networks", Proc. 9th European Conference on Wireless Sensor Networks, Trento, Italy, February 2012.
46. Md. Reaz Uddin, China V. Ravishankar, Vassilis J. Tsotras, "A System for Discovering Regions of Interest from Trajectory Data", 12th International Symposium on Scientific and Statistical Databases, Minneapolis, MN, August 2011. (Demonstration.)
47. Jenn-Long Liu, China V. Ravishankar, "ERoS: Role Sharing for Improved Energy Efficiency in Cluster-Based Wireless Sensor Networks", The 2011 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'11), pp.-, Las Vegas, Nevada, USA, July 2011
48. Md. Uddin, China V. Ravishankar, Vassilis J. Tsotras, "Finding Regions of Interest from Trajectory Data", 12th IEEE International Conference on Mobile Data Management, Luleå, Sweden, June 2011, pp. 39-48.
49. Jenn-Long Liu, China V. Ravishankar, "Genetic Algorithm-Based Adaptive Clustering Protocol in Wireless Sensor Networks", 3rd International Conference on Machine Learning and Computing (ICMLC 2011), pp.223-227, Singapore, February 2011.

50. Saugat Majumdar, Dhananjay Kulkarni, and China V. Ravishankar, "DHCP Origin Traceback", Proc. 12th International Conference on Distributed Computing and Networking, January 2–5, 2011, Bangalore, India, pp. 394–406.
51. Dhananjay Kulkarni and China V. Ravishankar, "Real-Time, Load-Adaptive Processing of Continuous Queries Over Data Streams", 2<sup>nd</sup> International Conference on Event-Based Systems", (Usenix, IEEE, and ACM), Rome, Italy, July 2008.
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