

Curriculum Vitae

Professor B Srinivasan

1. Personal Information

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Academic Qualifications	PhD (Computer Science), M.Tech (Computer Science), B.Engg (Hons) (Electronics and Communication Engineering)
Current Position	Head, Clayton School of Information Technology, Faculty of Information Technology, Monash University, Australia
Post Major Administrative Positions	Head of Various Schools/Departments of the Faculty of Information Technology - 1994-1998, 2000-2004, 2007 - continuing
Honours (Major ones)	Monash Vice-Chancellors award for excellence in PhD research supervision (2002), Best Papers award in 6 International Conferences
Commercial Books	2 + 1 (signed with a publisher)
Edited Commercial Book	1 + 1 (under publication)
Edited Conference Proceedings	3
Referred Journal Publications	74
Referred Book Chapters	22

Referred International Conference Papers	190
Research Grants	Around 2.0+ Million Australian Dollars
Number of PhD theses supervised to completion	36
Number of Masters theses by research supervised to completion	18
Professional Activities	External examiner for Computer Science degrees for Two (2) outside Australian Universities, Conference organizer and member of approximately 6 conferences, Editorial board member of two international journals, examiner for PhD theses, etc.
Where to find a detailed CV	http://www.csse.monash.edu.au/~srini/SriniCV.pdf

2. Academic Qualifications

Ph.D. (Indian Institute of Technology, Kanpur, India), in Computer Science, 1979 (by research thesis).

M. Tech, Master of Technology (Indian Institute of Technology, Kanpur, India), in Computer Science, 1975 (by thesis).

B.Engg.(Hons), (Madras University, India) with High Distinction Honors and Gold Medallist in Electronics and Communication Engineering, 1973.

3. Awards and Special Assignments

- Highly command award for the paper in the 23rd IEEE International Conference on Advanced Information Networking and Applications (AINA 2009).
- Best paper award in the International Conference on Data Mining and Applications (ICDMA), Hongkong, 2008.
- Award for the outstanding published journal article in the IGI Global Publications for the year 2007.
- Excellent Paper Award in the 19th IEEE International Conference on Advanced Information Networking and Applications (AINA 2005)
- Vice-Chancellor's award for Postgraduate Supervision – 2002, Monash University
- Best Paper Award at the 1992 ISSM conference, Baltimore, USA.
- Best paper in the Pacific Computer Communications Conference, Seoul, 1985.
- Gold Medal for the best student in Bachelor of Engineering from Institute of Engineers (India) in all braches of Engineering, 1974.
- January 1974 - Meritorious award for being the best student in Bachelor of Engineering.
- Recipient of Government Scholarship for Masters and Doctoral degrees – 1973-1978.
- External Examiner for the Department of Computer Science, University of West Indices, 2001-continuing
- External academic advisor and examiner for the Universiti Tunku Abdul Rahmn, Petaling Jaya, Malaysia, 2009-continuing..
- 1981 and 1982 -Seconded by the Government of India to the Division of Computer Applications, Asian Institute of Technology, Bangkok, for developing graduate courses.

4. Employment Experience

4.1 Management Appointments

- **Head, Clayton School of Information Technology**, Faculty Information Technology, Jan 2007 – Continuing.
- **Head, School of Computer Science and Software Engineering (Clayton and Caulfield Campuses)**, Faculty of Information Technology, Jan 2003 – Dec 2004.
- **Head, School of Network Computing (Peninsula Campus)**, Faculty of Information Technology, Sept 2000- 2002. During this tenure, I continued my teaching and research student supervision responsibilities in both the Schools (SCSSE and SNC).
- **Head, Department of Computer Technology (Caulfield Campus)**, Faculty of Computing and Information Technology, January 1994 - December 1997.
- **Research Director, Department of Computer Technology (Caulfield Campus)**, Faculty of Computing and Information Technology, January 1992 - December 1993.

4.2 Academic Appointments at Monash University

- **Professor of Information Technology**, School of Computer Science and Software Engineering, Monash University, Australia, January 1994.
- **Associate Professor**, Department of Computer Science, Monash University, Australia, January 1993 - December 1993.
- **Senior Lecturer**, Department of Computer Science, Monash University, Australia, January 1987 - December 1992.
- **Lecturer**, Department of Computer Science, Monash University, Australia, June 1984 - December 1986.

4.3 Other Appointments

- **Lecturer & Senior Lecturer**, Department of Information Systems and Computer Science, National University of Singapore, October 1982 - June 1984 and June 1987 - October 1998.
- **Assistant Professor**, Department of Computer Science, Indian Institute of Technology, Kanpur, India, January 1980 - October 1982.
- **Senior Systems Analyst**, Department of Electronics, Government of India, December 1978 - January 1980.

5. Current Areas of Research

In the last three years, my main research contributions have been in the following three major areas. The contributions in all these areas can be distilled to the specification of models and tools which allow the development of efficient applications in their respective domains.

(a) **Multimedia Information Systems:** The use of digital libraries and their online access via the internet is gaining popularity. Due to their contents being multimedia, such as text, image, audio, video, to name but a few, the conventional storage, search and retrieval techniques based on textual documents are no longer valid and the database management systems provide limited capabilities for handling multimedia data. The three major characteristics that make the design of Multimedia Information Retrieval Systems complex are (i) the presentation of data at different quality levels and therefore variable in size; (ii) the semantics of data is subjective depending on the interpretation of the user; and (iii) the multimedia data is information rich and hence, there are different ways of querying the same information. My research has resulted in the development of semantically rich retrieval models that are based on the latent semantic content of the multimedia objects, as well as using Bayesian reasoning for the matching and retrieval process. The former models provide a way of tagging the semantic contents of objects while the latter allow to incorporate uncertainty that is present during a user's feedback process. The major contribution of my research is not only in the development of these models, but also in the development of a test bed which is used as a platform for testing various retrieval algorithms. This test bed has been used by a number of researchers. My active contribution in this area has led to the successful completion of three research theses, a software tool for teaching in the subject on Multimedia Retrieval Systems and the presentation of keynote/invited talks and tutorials in international conferences.

(b) **Knowledge Discovery in Large Databases:** A new generation of techniques and tools is required to facilitate the intelligent and automated analysis of large volumes of data and for discovering critical patterns of useful information. Among the modeling tools, Artificial Neural Networks tools seem to scale up easily for large databases. However, such networks face a major restriction of their pre-defined network structure which is fixed through the life cycle of the mining process. A pre-defined structure in a sense, defines the relationships in the data which is supposedly

unknown to start with. A new model called the Growing Self Organising Map (GSOM) was developed by D Alahakkon and myself which not only retains the good characteristics of the conventional self organising maps but also allows us to capture the topology of the data by dynamically adapting the shape of the network. This adaptation is considered to be a major breakthrough in self organising theory. The model and its analysis have appeared in the prestigious *IEEE Transaction on Neural Networks* journal and has more than 200 citations. Also this paper was in the top 1% of cited papers between 2001-2007. The adaptive nature can help data mining analyst with the ability to control the spread of the map from an abstract to a detailed level of analysis making it possible to mine efficiently from large databases. This contribution has not only spun off a number of research students, but also has resulted in a collaborative work with the University of Melbourne. We have successfully obtained an ARC large grant in 2000 for three years to support the research.

- (c) **Mobile Security and Application Development:** Mobility combined with the internet has opened a number of interesting applications. Mobility based application development has to take into account the execution environment of the computation which by its nature mobile and hence not pre-defined. My research contribution in this area is in the development of a framework. It is based on the abstract concept of *context* which encapsulates the mobility and functionality aspects of the computation. The modeling framework is also equipped with a language for specifying mobility properties and the behaviour of an application which makes rapid application development possible. As an extension, I am currently looking at the security issues in the mobile (wireless) payment systems.

6. Refereed Publications

6.1 Commercial Books

1. Visual Editing on Unix (with K. Ranai), *World Scientific Publishing Company, New Jersey*, 1989, pp 182 (reviewed in Australian Computer Journal, 1990).
2. Databases in the 1990's, Australian Database Conference Proceedings, 1990, (Edited with J. Zeleznikow), *World Scientific Publishing Company, New Jersey*, May 1990, pp 213.
3. Distributed Processing - Concepts and Structures, (with A. L. Ananda), *IEEE Computer Society Press, California, USA*, January 1991, pp 402.

4. Databases in the 1990's - Volume 2, Second Australian Database - Information Systems Conference Proceedings (Edited with J. Zelenikow), *World Scientific Publishing Company, New Jersey*, May 1991, pp 431.
5. Research and Practical Issues in Databases (Edited with J. Zelenikow), *World Scientific Publishing Company, New Jersey*, 1992, pp 386.
6. Unix Document Processing and Typesetting, *World Scientific Publishing Company, New Jersey*, 1993, pp 445.

6.2 Non-Commercial Books

7. Mobile Computing, Databases and its Applications, Volume I and II (Edited with A. Zaslavsky) Department of Computer Technology, Monash University, ISBN 0-7326-1124-5, 1996 and ISBN 0-7326, 1997.
8. Database Management Systems (Subject course materials), Monash University, 1992, pp 371.
9. Computer Technology Research Publications, Volume I (Edited with G. Martin), Monash University, 1992/1994, pp 173.
10. Data Communications and Computer Networks (subject course materials), Volume I and II, Monash University, 1992/1994, 182 and 76 pages.

6.3 Refereed Papers Appeared in Edited Books

11. An Enhanced Bandwidth Allocation algorithms for QoS Provision in IEEE 802.16 BWA (with Ehsan A Aghdaee and N Mani), Lecture Notes in Computer Science – LNCS 5200 – Information Networking: Towards Ubiquitous Networking and Services, 2008, pp 709 – 718.
12. Discovering Knowledge of Association using Coherent Rules (with Sim, A. T. H., Zutshi, S., Indrawan, M.). In Trends in Communication Technologies and Engineering Science: Springer. (Ch. 24, 2008.
13. Feedback in Content-Based Image Retrieval using Probabilistic Inference Networks (with Campbell Wilson), in Studies in Computational Intelligence for Modelling and Prediction, edited by S K Halgamuge, L Wang, Springer-Verlag, 2005 pp 197 – 208.
14. Limited-Use Key Generation Scheme for Internet Transactions,(with S Kungpisdan and P D Le) Information Security Applications, LNCS 3325, Springer, pp 302-316
15. Emergent Semantics: An Overview,(with V Ratnaike and S Nepal)in Managing Multimedia Semantics, Idea Group Publications, pp
16. The Role of RF in Managing Multimedia Semantics- A Survey,(with S Zutshi, C Wilson and S Krishnaswamy)in Managing Multimedia Semantics, Idea Group Publications, pp

17. Issues in Spatiotemporal Data Modeling (with R Price and Kotagiri Rao) Chapter 20, in *Design and Management of Multimedia Information Systems: Opportunities and Challenges*, IDEA Group Publishing, London, 2001, pp 412 - 433.
18. Mining A Growing Feature Map by Data Skeleton Modeling (with D Alahakoon S K Halgamuge) In *Data Mining and Computational Intelligence*, Edited by Abraham Kandel, Mark Last and Horst Bunke, Physica-Verlag, New York, pp 217-250.
19. A Dynamic Method for Compressing Dictionaries, (with S Kulkarni, and M V Ramakrishna) in *The Emerging Information Technology Gaint*, Edited by L M Patnaik, et.al, Tata McGraw Hill, 1996, pp 117-124.
20. Performance Evaluation of Tree-based Structures, (with V N Tran, P D Le, and B Sier) in *Database and Expert System Applications*, Edited by R Wagner and H Thoma, Springer Verlag, 1996, ISBN 3-54-61656-X, pp 845 - 854.
21. An Efficient Technique for Dictionary Representation (with S. Kulkarni) in *IT Challenges and Opportunities*, Edited by R. K. Bagga and B. C. Bhargara, Tata McGraw-Hill, New Delhi, 1995, pp 173-180.
22. Distributed Information Retrieval System (with D. Ghazfan) in *Computer Systems and Education*, Edited by N. Balakrishanan et.al., Tata McGraw Hill Ltd, 1994.
23. Concurrency Control Based Database Design (with M. Nolan), in *Data Management: New Directions and Prospective*, Edited by S. Bandyopadhyay, International Journal Services, India, 1994, pp 20-46.
24. Key-based Update Anomalies and the Justification of 4NF in Database Design, (with M.Vincent) in edited by R. Sacks-Davis, Global Publications, Singapore, 1994, pp 346 - 359.
25. A Distributed Frame Generator and its Applications (with W. Zhao and C. Avram), *In The Open Systems Future: Leveraging the LAN*, (edited by R. Vogel, P. H. Marshall, B. C. Glasson and A. A. Verijn-Ctuart, Elsevier Science Publishers, The Netherlands, 1993.
26. Armstrong Relations for Functional and Multi-Valued Dependencies in Relational Databases (with M. Vincent), In *Advances in Database Research*, Edited by M. E. Orlowska and M. Papazoglou, World Scientific Publishing, Singapore,1993, PP 317-328.
27. A Metric for Transaction Driven Database Design (with M. Nolan), In *Computer and Data Management: Current Applications and Future Trends*, Edited by V. B. Kaujalgi and H. Krishnamurthi, Tata McGraw Hill, New Delhi, 1992, pp 171 - 192.
28. Semantic Justification for 4NF in Relational Database Design, (with M. Vincent), In *Computer and Data Management: Current Applications and Future Trends*, Edited by V. B. Kaujalgi and H. Krishnamurthi, Tata McGraw Hill, New Delhi, 1992, pp 51 - 60.

29. Intelligent Databases (with J. Zeleznikow), in Databases in the 1990s: Volume 2, 1991, pp 1-16.
30. Road Ahead - From Relational to Object Oriented Databases (with J. Zeleznikow), Databases in the 1990s: Volume 1, 1990, pp 1-3.
31. On the Identification of Semijoin Sequences in Distributed Query Processing (with B. C. Ooi), Distributed Processing, Edited by M. H. Barton and E.L. Dagless, North-Holland Publications, Amsterdam, 1988, pp 551 - 562.
32. Data Dissemination in Mobile Databases (with A B Waluyo and D Tanier), Encyclopedia of Information Science and Technology, Idea Group Publishing, USA, (to appear 2005).

6.4 Refereed Journal Publications

33. Dynamic Key Cryptography and Applications (with H H Ngo, X Wu, C Wilson), Journal of Network Security, 2009, to appear.
34. Novel Authentication and Authorisation Management for Sensitive Information Privacy Protection using Dynamic Key based Group Key Management (with Xianping Wu, Huy Hoang Neo and Phu Dung Le), Journal of Computer Science and Applications, vol 6, No 3, pp 57-74, 2009
35. Mobile Division Query Processing Incorporating Multiple Non-Collaborative Servers (with Say Ying Lim and David Tanier), Journal of Data Communications and Networking, vol 5, no3 ,pp 67-90, 2009.
36. Mobile service oriented architectures for NN-queries, (with A. B. Waluyo, D. Tanier and J. W. Rahayu), 2009, *Journal Of Network And Computer Applications [P]*, vol 32, issue 2, Academic Press Ltd Elsevier Science Ltd, London England UK, pp. 434-447.
37. The Discovery of Coherent Rules (with A T H Sim and M Indrawan), IAENG Journal of Computer Science, Vol 35, No 3, 2008, pp 403 -412
38. An enhanced bandwidth allocation algorithms for QoS provision in IEEE 802.16 BWA (with E. Aghdaee and N. Mani), 2008, , *Lecture Notes in Computer Science*, vol 5200, Springer-Verlag, Berlin Germany, pp. 709-718.
39. Security analysis for Internet banking models, (with O. Dandash, X. Wu, Y. Wang and P.D. Le), 2008, *International Journal of Computer & Information Science*, vol 9, issue 2, The International Association for Computer & Information Science (ACIS), Mt Pleasant MI USA, pp. 1-10.
40. Importance of Negative Association and Mining of Association Rule Pairs (A Sim, M Indrawan and B Srinivasan), *Journal of Business Intelligence and Data Mining*, 2008, to appear.

41. The importance of Negative Associations and the Discovery of Association Rule Pairs (with A T H Sim and M Indrawan), *International journal of Business Intelligence and Data Mining (IJBIDM)*, Vol 3, No 2, Inderscience Publishers, Olney United Kingdom, pp 158-176, 2008.
42. Fraudulent Internet Banking Payments Prevention using Dynamic Key (with Dandash, O., Wang, Y., Le, P. D) *Journal of Networks*, vol 3, issue 1, Academy Publisher, Oulu Finland, pp. 25-34, 2008.
43. The Discovery of Coherent Rules (with A T H Sim, S Zutshi and M Indrawan), *IAENG International Journal of Computer Science*, vol 35, issue 3, International Association of Engineers, Hong Kong, pp. 1-10, 2008.
44. Indexing Schemes for Multichannel Data Broadcasting in Mobile databases (with Waluyo, A. and Taniar, D), *International Journal of Wireless and Mobile Computing*, Vol 3, Issue 1/2, Inderscience Publishers, UK, pp. 79-90, 2008.
45. Incremental K-nearest Neighbor search on Road Networks (with Zhao, G., Xuan, K., Taniar, D), *Journal of Interconnection Networks*, Vol 9, Issue 4, World Scientific Publishing Company, Singapore, pp. 455-470, 2008
46. Mobile Information Processing Involving Multiple Non-collaborative Sources (with Lim, S. Y., Taniar, D) , *International Journal of Business Data Communications and Networking*, Vol 3, issue 2, Idea Group Publishing, USA, pp. 72-93, 2007. (***Selected as the best paper of the journal***).
47. Muniyandi, M., Krishnaswamy, S., Srinivasan, B., 2007, Improving the quality of business and quality of experience in web services through prioritising and scheduling (with Muniyandi, M., Krishnaswamy, S.), *International Journal of Business Process Integration and Management*, vol 2, issue 3, Inderscience Publishers, Geneva Swizerland, pp. 156-171, 2007
48. Nair, R., Wilson, C. C., Srinivasan, B., 2007, A conceptual query-driven design framework for data warehousing (with Nair, R., C Wilson.), *Informatika*, vol 19, World Academy of Science, Engineering and Technology, Turkey, pp. 141-146, 2007.
49. Indexing Schemes for Multi Channel Data Broadcasting in Mobile Databases, (with A B Waluyo and D Taniar), *International Journal of Wireless and Mobile Computing*, (to appear Mar/Apr 2005).
50. Research on Location-Dependent Queries in Mobile Databases"(with A B Waluyo and D Taniar), *International Journal on Computer Systems: Science and Engineering*, , vol 20, issue 2, CRL Publishing Ltd, London UK, pp79-95.
51. Optimising Query Access Time over Broadcast channel in Mobile Databases(with A B Waluyo and D Taniar), *International Journal of Wireless and Mobile Computing (IJWMC)* – submitted.
52. Efficient Broadcasting Indexing Scheme for Location Dependent Queries in Multi channels Wireless Environment, *Journal of Interconnection Networks (JOIN)*, Vol 6 issue

- 3, World Scientific Publishing Co. Pte. Ltd, Singapore, pp 303-321, Special issue on P2P systems and distributed applications, July 2005.
53. A limited-used key generation scheme for internet transactions, (with S.Kungpisdan, and P. D. Le), 2005, *Lecture Notes in Computer Science*, vol 3325, Springer-Verlag, Berlin Germany, pp. 302-316.
 54. On building a data broadcast system in a wireless environment, (with A. B.Waluyo, G. Goh, and D. Taniar), 2005, *International Journal of Business Data Communications and Networking*, vol 1, issue 4, Idea Group Publishing, Hershey USA, pp. 15-37
 55. Research in mobile database query optimization and processing, (with A. B. Waluyo, and D. Taniar), 2005, *Mobile Information Systems*, vol 1, issue 4, IOS Press, Amsterdam Netherlands, pp. 225-252.
 56. Incorporating Global Index with data placement scheme for multi channels mobile broadcast environment, (with A.B. Waluyo, D. Taniar, and W. Rahayu), 2005, *Lecture Notes in Computer Science*, vol 3824, Springer-Verlag, Berlin Germany, pp. 755-764.
 57. Scalable multi-subgroup key management in wireless networks, (with Y. Wang and P. D. Le), 2005, *International Journal of Computer Science and Network Security*, vol 5, issue 11, Sang Hoon Lee IJCSNS, Seoul Korea, pp. 95-105.
 58. On-Mobile Query Processing Incorporating Multiple Non-collaborative Servers (with Say Ying Lim, David Taniar), *Journal of ingenierie des systemes d'information*, 2005, Volume 10, Number 5, lavoisier/Hermes, Paris France pp 9-38.
 59. Global Indexing Scheme for Multi Indexing Channels in a Mobile Computing Environment (with A B Waluyo and D Taniar), *Radiomatics - Journal on Communication Engineering*, vol. 1, no. 1, Indonesian Telecommunication Development Society, Bandung Indonesia pp. 18-29, 2004.
 60. +An evaluation of web services in the design of a B2B application, (with K. Hogg, P. Chilcott, and M. Nolan), 2004, *Computer Science 2004: Proceedings of the Twenty-Seventh Australasian Computer Science Conference*, vol 26, Australian Computer Society Inc., Sydney NSW Australia, pp. 331-340.
 61. Allocation of data items for multi channel data broadcasting in a mobile computing environment, (with A. B. Waluyo, and D. Taniar), 2004, *Lecture Notes in Computer Science*, vol 3207, Springer-Verlag Berlin, Berlin Germany, pp. 409-418.
 62. Optimizing query access time over broadcast channel in a mobile computing environment, (with A. B. Waluyo, and D. Taniar), 2004, *Lecture Notes in Computer Science*, vol 3207, Springer-Verlag Berlin, Berlin Germany, pp. 439-449.
 63. Lightweight mobile credit-card payment protocol, (with S. Kungpisdan and P. D. Le), 2003, *Lecture Notes in Computer Science*, vol 2904, Springer-Verlag, Berlin Germany, pp. 295-308.

64. Global index for multi channel data dissemination in mobile databases, (with A. B. Waluyo, and D. Taniar), 2003, *Lecture Notes in Computer Science*, vol 2869, Springer-Verlag, NY USA, pp. 212-219.
65. Optimal broadcast channel for data dissemination in mobile database environment, (with A.B. Waluyo, and D. Taniar), 2003, *Lecture Notes in Computer Science*, vol 2834, Springer-Verlag, NY USA, pp. 655-664.
66. Closing the Gap: Requirements of a Conceptual Model for Data Warehousing (with R Pillai), *Journal of Information Systems*, Volume 3, International Association for Computer Information Systems, Oklahoma, USA pp 504–509, 2002.
67. A Dynamic Self Organising Maps with Controlled Growth for Knowledge Discovery, (with D Alahakoon and S K Halgamuge), *IEEE Transactions on Neural Networks*, Volume 11, No 3, IEEE Computer Society Press , New York USA, May 2000, pp 601 – 614.
68. A Neural Networks Based Approach for Fast Mining Characteristic Rules, (M. S. M. Rahman and X. Yu), 1999, *Lecture Notes in Artificial Intelligence Advanced Topics in Artificial Intelligence*, vol 1747, Springer-Verlag, Berlin GERMANY, pp. 36-47.
69. Multiple Browsing Levels in Digital Libraries (with S Kulkarni, P D Le) *DESIDOC Bulletin of Information Technology*, Special Issue on Digital Libraries, Vol 17, No 6, Defense Scientific Information & Document. Centre, Delhi India 1997, pp 57 - 65.
70. Integrating Gestures into the User-interface Management Systems (with Xion Yan Su and L Goldschlager), *Journal of Visual Computer*, Vol 13, Springer-Verlag, London UK 1997, pp 168 - 183.
71. A Migration Tool to Support Resource and Load Sharing in Heterogeneous Computing (with P D Le) *Journal of Computer Communications*, Vol 20, No 3, 1997, Elsevier, Amsterdam Netherlands pp.361 - 375.
72. Theorems, methods and applications in multimedia storage and, achiving systems, (with J. Jin), 1997, *Australian Computer Journal*, vol 29, Australian Computer Society, Sydney NSW Australia, p. 121.
73. Storage Efficient Data Structure for Large Lookup Dictionaries, (with V M Malhotra and S Kulkarni) *Information Processing Letters*, Volume 58, 1996, pp 201 - 206.
74. Parallellising Genetic Algorithms for SIMD Architecture (with D. Ghazfan) in *Australian Journal of Intelligent Information Processing Systems* Vol. 2, No. 1, 1995, pp 36 - 44.
75. Distribution Algorithms for Document Allocation in Multiprocessor Information Retrieval Systems (with D. Ghazfan and M.Nolan) *Journal of Microprocessing and Microprogramming*, Vol 40, 1994, pp 327 - 354.
76. A Note on Relations which are in 3NF but not in BCNF (with M. Vincent) *Information Processing Letters*, Vol 48, 1994, pp 281 - 283.

77. Redundancy and the Justification for Fourth Normal Form in Relational Databases, (with M. Vincent) International Journal of Foundations of Computer Science, Vol 4, 1994, p 355 - 365.
78. Update Anomalies and the Justification for 4NF in Relational Databases, (with M. Vincent) Information Sciences, Vol 81, 1994, pp 87 - 102.
79. An Adaptive Overflow Technique for Deferred Splitting in B-Trees, British Computer Journal, Special Issue on Data Structures, Vol 34, No. 5, 1991, pp 397 - 405.
80. Estimating Network Communication Speeds for Office Automation (with J. McCallum and K. Ranai), Computer Communications, Vol. 13, No 2, March 1990, pp 99 - 107.
81. Self Assessment Procedure on Operating Systems (with J. Rosenberg and A. L. Ananda), Communications of ACM, Vol. 33, No 2, Feb 1990, pp 190 - 200.
82. Subsystem Approach for Integrity Enforcement (with K. K. Chan and Ken J. McDonell), Journal of Information and Optimisation Sciences, Vol. 11, Number 1, January 1990, pp 67 - 80.
83. Complexity of Benchmark Software for Supercomputers (with K. Ranai), Journal of Supercomputing, Vol. 3, 1989, pp 235 - 242.
84. Study of Self Organising Heuristics for Skewed Access Patterns (with H. T. Ch'ng and B. C. Ooi), Information Processing Letters, Vol. 30, No. 5, March 1989, pp 237 - 244.
85. VLSI Implementable Data Structures for Database Problems, Journal of Singapore National Academy of Sciences, Vol. 17, June 1989, pp 119 - 122.
86. Properties of Semijoin Sequences (with B. C. Ooi), Journal of Computer Science and Technology, Vol. 4, No. 2, April 1989, pp 106 - 115.
87. Pseudo tar- A Bi-directional Transfer Utility for VMS and Unix (with A. L. Ananda), Journal of Singapore National Academy of Sciences, Vol 19, December 1987, pp 124 - 127.
88. On Central Points and its Significance in Systems Analysis (with V. K. Rao), Journal of Systems and Cybernetics in Management, Vol 16 No. 1-2, 1987, pp 14 - 22.
89. An Implementation Model Using Query Optimisation Strategies for Integrity Enforcement (with K. K. Chan), Australian Computer Science Communications, Vol. 9, No. 1, Feb 1987, pp 1 - 13.
90. Analysis of Test Problems used for Comparison of Type II Stiff ODE Solvers (with C. Lakshmanan), Journal of Computers and Structures, Vol. 24, 1986 pp. 777 - 780.
91. A Fail-Safe File Server for Terminal Support Networks (with A. L. Ananda), Computer Networks and ISDN Systems, Vol. 11, No. 5, 1986, pp 383 - 390.

92. Design of a Prolog-based Expert System for Planning Separations of Steroids by High-Performance Liquid Chromatography (with H. Gunasingham and A. L. Ananda), *Analytica Chimica Acta*, Vol. 182, 1986, pp 193 - 202.
93. Approximate Storage Utilisation of B-Trees (with G. K. Gupta), *Information Processing Letters*, Vol. 22, 1986, pp. 243 - 246.
94. Principles and Issues of Expert Systems - A Brief Review (with H. Gunasingham and A. L. Ananda), *Journal of Singapore National Academy of Sciences*, Vol. 14, 1985, pp 101 - 108.
95. Recoverable File Store for Microprocessor Systems (with H. Gunasingham), *Microprocessors and Microsystems*, Vol. 9, 1985, pp. 179 - 183.
96. Machine Transliteration - Devanagari to Roman (with R. M. K. Sinha), *Journal of Institute of Electrical and Telecommunication Engineers*, Vol. 30, 1984, pp. 243-245.
97. On-line Examination and Evaluation (with A. L. Ananda), *Journal of Singapore National Academy of Sciences*, Vol. 8, 1984, pp. 55 -59.
98. Methodology for the Evaluation and Selection of Microprocessors for Specific Applications, *Microprocessors and Microsystems*, Vol. 7, 1983, pp. 439 - 443.
99. Formal Language Models for Biological Processes: A Survey (with P. N. Avadhani), *Journal of Singapore National Academy of Science*, Vol. 10-12, 1983, pp. 45 - 51.
100. On the Synthesis of Decision Tables, *Communications of ACM*, Vol. 26, 1983, pp. 135 - 136.
101. When Universal Quantifiers Need Cartesian Product?, *Journal of Computer Science and Informatics*, Vol. 13, 1983, pp. 45-47.
102. Algorithms to Find Central Points and the Significance of Central Points in System Analysis (with V. K. Rao), *Journal of Combinatorics, Information and System Sciences*, Vol. 7, 1982, pp. 155 - 168.
103. Performance Amelioration of Relational Databases (with V. Rajaraman and R. Sankar), *Journal of CSI*, Vol. 10, 1982, pp. 28 - 39.
104. Algorithms to Distribute a Database for Parallel Searching (with R. Sankar), *IEEE Transaction on Software Engineering*, Vol. 7, No 1, 1981.
105. Parallel Searching in Distributed Databases, *Computer Networks*, Vol. 4, 1980, pp. 157-166.
106. On the Normalisation of Relational Databases (with V. Rajaraman), *Information Processing Letters*, Vol. 9, 1979, pp. 89 - 92.

6.5 Refereed Conference Publications

107. Network Voronoi Diagram Based Range Search (with Kefeng Xuan, Geng Zhao, David Taniar, Mytham Safar and M Gavrilova), 23rd IEEE Conference on Advanced Information Networking and Applications (AINA 2009) (***Highly commended paper award at the conference***).
108. Pulmonary tumor volume delineation in PET images using deformable models (with A. Kanakatte Gurumurthy, J. Gubbi, N. Mani, T. Kron, D Binns, and M. Palaniswami) 2008, *Proceedings of the 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, 20 August 2008 to 24 August 2008, IEEE, Piscataway NJ USA, pp. 3118-3121.
109. A Threshold Free Implication Rule mining (with A T H Sim and M Indrawan), IAENG International Conference on Data Mining and Applications (ICDMA), Hongkong, 2008 – pp 578 -583 (***Selected as the best paper of the conference***).
110. A study of wavelets-based image representations and their effectiveness (with M. Le Viet and P. D. Le), 2008, *Proceedings of the 2008 International Conference on Image Processing, Computer Vision and Pattern Recognition*, 14 July 2008 to 17 July 2008, CSREA Press, Las Vegas NV USA, pp. 1-5.
111. An efficient partial key pre-distribution scheme for chain oriented sensor networks (with Q. Mamun and S. Ramakrishnan), 2008, *Proceedings of the TENCON 2008, IEEE Region 10 Conference*, 18 November 2008 to 21 November 2008, IEEE, New York NY USA, pp. 1-6
112. Efficient key management for secure wireless multicast (with Y. Wang and P.D. Le), 2008, *Proceedings of the 2008 International Conference on Convergence and Hybrid Information Technology*, 11 November 2008 to 13 November 2008, IEEE Computer Society, Los Alamitos CA USA, pp. 1131-1136.
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 227. A Transformational Approach to Image Retrieval, (with S. Kulkarni, S., M. V. Ramakrishna and S.Ray), 1998, *Proceedings of the LASTED Int. Conf. on Signal and Image Processing*, Las Vegas USA, 28-31 October 1998, IASTED/ACTA Press, Calgary Canada, pp. 378-381.
 228. New Approach to Image Segmentation based on Probabilistic Distance Criteria (with S Ray and S Shaky) Proc. of *Signal and Image Processing Conf*, SIP 97, New Orleans, USA, 4-6 December 1997, IASTED/ACTA Press, Anaheim CA USA pp 459-464.
 229. Abstract Ticket to Support Mobile Users (with LE, R Price and S Mohammed) Proceedings of the *Second Australian Workshop on Mobile Computing and Database Applications*, 27-28 Nov 1997, Melbourne, Monash University, Melbourne Vic Australia pp102 - 107.
 230. Image Classification Based on Functional Analysis to Achieve Browsing Levels (with S Kulkarni and S Ray) Proc. of *Signal and Image Processing Conf*, SIP 97, New Orleans, USA, 4-6 Dec 1997, IASTED/ACTA Press, Anaheim CA USA pp 285-290.
 231. Dichotomy of CASE in Supporting Production Software Development (with N Mani and M V Ramakrishna) Proc. of *Int. Conf on Software Engineering and Applications* Hyderabad, India, 19-21 Dec 1997, Institute of Public Enterprise, Hyderabad India pp 160-166.
 232. A Neural Network Architecture for Efficient Close Proximity Match of Large Databases (with M S Rao and A K Pujari) in *Eight International workshop on Database and Expert Systems Applications (DEXA 97)*, Toulouse, Sept 1997, pp 444-449.

233. Classification of images based on compression behaviour, (S. Kulkarni), 1997, *Conference Proceedings Image Analysis*, Melbourne, 3 October, Monash University, Melbourne Vic Australia, pp. 49-54.
234. Application of Artificial Neural Network Model for Optical Character Recognition, (with N Mani) in Proc. of *IEEE Int. Conf. on Systems, Man and Cybernetics*, Orlando, Florida, 12-15 October, IEEE Computer Society, New Jersey USA 1997, pp 2517 - 2520.
235. Using Genetic Algorithm for Slicing Floorplan Area Optimization in Circuit Design (*invited talk* with N Mani) Proc. of *IEEE Int. Conf. on Systems, Man and Cybernetics* Orlando, Florida, 12-15 October, IEEE Computer Society, New Jersey USA 1997, pp. 2888 - 2892.
236. Application of Artificial Neural Network Model for Optical Character Recognition, (with N. Mani), 1997, *1997 IEEE International Conference on Systems, Man and Cybernetics*, Orlando, Florida USA 12-15 Oct 97, IEEE, Piscataway NJ USA, pp. 2517-2520.
237. Using Genetic Algorithm for Slicing Floorplan Area Optimization in Circuit Design, (with N. Mani), 1997, *1997 IEEE International Conf. on Systems, Man & Cybernetics*, Orlando, Florida, USA. 12-15 Oct 97, IEEE, Piscataway NJ USA, pp. 2888-2892.
238. A new neural network architecture for efficient close proximity match of large databases, (with S. Rao and A. Pujari), 1997, *Eighth International Workshop on Database and Expert Systems Applications*, France, 1-2 September, IEEE Computer Society, Los Alamitos CA USA, pp. 444-449.
239. Experience with developing CD-ROM for subject delivery to computing students, (with A. Zaslavsky), 1997, *Australasian Conference on Information Systems*, Adelaide, 29-2 October, University of South Australia, Adelaide SA Australia, pp. 755-761.
240. Information Systems on Mobile Computing Platforms: Technology Expectations and Social Implications- 50 Years of Information Age (with A Zaslavsky, et. al) Proceedings of *Conference on Information Systems on Mobile Computing Platforms, Technology, Expectations and Social Implications*, Moscow, July 1996, pages 21.
241. Towards Meaningful Bayesian Network for Information Retrieval Systems, (with D Ghazfan and M Indrawan) Proceedings of the *Sixth International Conference IPMU'96 Information Processing and Management of Uncertainty in Knowledge-Based Systems*, Granada, Spain, July 1996, pp. 841-846.
242. Bayesian Network as a Retrieval Engine, (with M Indrawan and D Ghazfan) *TREC-5 International Conference*, Washington DC, USA 20-22 November, 1996, pp 1-5.
243. Parallel Join Algorithms for Grid Files, (with S Mohammed, M V Ramakrishna & P D Le) Proceedings of *ROVPIA '96 International Conference on Robotics, Vision and*

- Parallel Processing for Industrial Automation*, Ipoh, Malaysia, November 1996, pp 873-878.
244. Mudra: An Electronic Payments Scheme for the Nets (with V Malhotra) Proceedings of the *7th Australian Conference on Information Systems*, Hobart, Tasmania, 11-13 December, 1996, pp. 449-459.
 245. A Dynamic Method of Compressing Dictionaries, (with S Kulkarni and M V Ramakrishna) Proceedings of the *31st Annual Convention of the Computer Society of India*, Bangalore, India, 30 October - 3rd November, 1996, pp. 117-124.
 246. Analytical Comparison of Two Hierarchical Representation of Hyperimages, (with C Wilson, and S Ray) ROVPIA '96 *International Conference on Robotics, Vision and Parallel Processing for Industrial Automation*, Ipoh, Malaysia, 28-30 November, 1996, pp. 922 - 927.
 247. Community Based Adaptive Parallel Genetic Algorithm for SIMD Architecture, (with N Mani) ROVPIA '96 *International Conference on Robotics, Vision and Parallel Processing for Industrial Automation*, Ipoh, Malaysia, 28-30 November, 1996, pp. 478 - 483.
 248. Using Hebbian Learning in Circuit Partitioning for Floor Plan Design, (with N Mani) ROVPIA '96 *International Conference on Robotics, Vision and Parallel Processing for Industrial Automation*, Ipoh, Malaysia, 28-30 November, 1996, pp. 317 - 322.
 249. Novel Parallel Join Algorithms for Grid Files, (with S Mohammed, M Bozyigit and P D Le), *IEEE International Conference on High Performance Computing 96*, India, 19-22 December, 1996, pp. 143 - 149.
 250. Topological Operations on Hyperimages Represented by Hierarchical Data Structures, (with C Wilson, and S Ray) Proceedings of the *Fourth International Conference on Control, Automation, Robotics and Vision (ICARCV '96)*, Singapore, December 1996, pp. 1754-58.
 251. Comparison of Hierarchical Representations of Binary Hyperimages, (with C Wilson, and S Ray) *Proceedings of Image and Vision Computing*, New Zealand 1996, August 1996, pp. 131-136.
 252. Comparison of Quadtree and Ternary Tree Representation of Binary Hyperimages, (with C Wilson, and S Ray) Proceedings of *Signal and Image Processing – SIP 96*, Orlando, November 11 - 14, 1996, pp. 79 -82.
 253. Efficient Management of Data and Transaction Replicas in Distributed Mobile Computing Systems, (with A Zaslavsky) Extended Abstract, Vol 2: Technology Track, *2nd International Baltic Workshop on Database and Information Systems*, Tallinn, Estonia, 12-14 June, 1996, pp. 175-176.
 254. Information Systems on Mobile Computing Platforms: Technology Expectations & Social Implications, (with A Zaslavsky, S J Lai, J Daly, C Avram, M Nolan, B Mittleman) Abstract. *50 Years of the Information Age ENIAC 50*, Moscow, Russia, 1-3 July, 1996, pages 21.

255. Primary Copy Method and its Modifications for Database Replication in Distributed Mobile Computing Environment , (with A Zaslavsky, M Faiz, A Rasheed, S Lai) *IEEE Symposium on Reliable Distributed Systems*, Niagara-on-the-Lake, Canada, October 1996, pp. 1-10.
256. Revising Replication Strategies for Mobile Computing Environment (with M. Faiz, A. Zaslavsky) in Proc. of *ECOOP'95 Workshop on Mobility and Replication*, Aarhus, Denmark, 1995, pp. 4A1 - 4A4.
257. A Semantically Correct Bayesian Network Based Information Retrieval System (with D. Ghazfan and M. Indrawan) in Proc. of *5th Hellenic Conference on Informatics*, Athens, 1995, pp. 639 - 648.
258. A Tool for Resource and Load Sharing in Heterogeneous Environments (with P D Le) in Proc. of *IASTED Int. Conf. on Parallel and Distributed Computing Systems*, Washington, 1995.
259. A Slicing-Floorplan Algorithm Implementation for VLSI Design (with N. Mani) in Proceedings of the first *Int. Conf. on Algorithms and Architectures for Parallel Processing*, Australia, 1995, pp. 859 - 862.
260. Multiple Bit Hashing: A New Approach to Bibliographic Search (with S. Kulkarni) Proc. of *LASTED Conf. on Modeling and Simulation* Pittsburgh, 1995, pp. 161 - 163.
261. An Adaptive Parallel Genetic Algorithm for SIMD Architectures, (with D. Ghazfan and N. Mani) in Proceedings of the *Int. Conf. on Robotics, Vision and Parallel Processing for Industrial Automation*, 1994, pp. 34 -40.
262. A Heuristic Procedure for Circuit Partitioning in VLSI Design, (with N. Mani), in Proc. of the *Int. Conf. on Robotics, Vision and Parallel Processing for Industrial Automation*, 1994, pp. 637 - 643.
263. A Bayesian Network Model for Information Retrieval (with D. Ghazfan, M. Indrawan and K. Krob), in *ACIS 5th Australasian Conf. on Information Systems*, 1994, pp. 259 - 271.
264. A Prototyping Tools to Support Migration in Distributed Environments (with P D Le) in Proc. of *Second Int. Symp. on Applied Corporate Computing*, Mexico, 1994, pp. 117 - 126.
265. Physical Database Design with Heuristic Optimisation (with M. Nolan), in *ACIS 5th Australasian Conf. on Information Systems*, 1994, pp. 237 - 247.
266. Monset- A Prototype Software Development Estimating Tool, (with G. Martin), in *Symposium on Assessment of Quality Software Development Tools*, Washington D. C., 1994, pp. 70 -82
267. Parallel Genetic Algorithms: A SIMD Approach (with D. Ghazfan and M. Nolan), *9th Int. Conf. on Systems Engineering USA*, July 1993.

268. Prototyping Distributed Applications based on RPC (with W. Zhao, C. Avram), Twelfth Annual *IEEE Phoenix Conf. on Computers and Communications*, 1993, pp. 517 - 523.
269. Fact Based Replacement Anomalies and Normal Forms in Relational Database Design (with M. Vincent), *Sixteenth Australian Computer Science Conference*, 1993.
270. Prototyping Tools for Distributed Applications Development (with W. Zhao and C. Avram), Proceedings of the *Second Australian Conference on Telecommunications Software*, February 1993, pp. 101 - 108.
271. Automatic Generation of Erlang Programs from LOTOS Specifications, (with U. M. Graetsch, B. R. Krishanan), Proceedings of the *Second Australian Conference on Telecommunications Software*, February 1993, pp. 109 - 116.
272. On the Allocation of Documents in the Distributed Memory Information Retrieval Systems, (with D. Ghazhan), Proceedings of the *26th Annual Hawaii Int. Conference on System Science*, Volume II, Jan 1993, pp. 33-34.
273. A Genetic Algorithm for Data Allocation in Multiprocessor Information Retrieval Systems (with D. Ghazhan), *Second International Conference on Computer Science*, December 1992, pp. 335 - 341.
274. Document Allocation in Multiprocessor Systems (with D. Ghazhan), *Second Pacific Rim Int. Conference on Artificial Intelligence*, September 1992, pp. 1123-1129.
275. Redundancy and Fourth Normal Form in Relational Databases (with M. Vincent), *Second International on Computer Science Conference on Data and Knowledge Engineering*, Dec 1992, pp. 432 - 438.
276. A Conceptual Data model for Storage and Retrieval of Meteorological and Climatological Data (with G. Martin and R. O'Brien), Proceedings of the *23rd Annual Pittsburgh Conference*, May 1992, pp. 1009 - 1016.
277. Hypertext Retrieval using Latent Semantic Analysis, (with K. S. O'Yang, L. M. Goldschlager), Proceedings of *HyperOz'92 Conference*, Feb 1992.
278. A Vector Space Model for Browsing in Hypertext, (with K. S. O'Yang, L. M. Goldschlager), *Australian Computer Science Communications*, Vol 14, No. 1, January 1992, pp. 655 -668.
279. Performance Analysis of Deferred Splitting B-Trees (with T. Li), Proceedings of the *Twenty-Second Annual Pittsburgh Conference*, May 1991, pp. 2409 - 2416.
280. A Declarative Language for Application-Specific User Interface Specification (with Xiaoyan Su and L. M. Goldschlager), *Proceedings of JCYCS-2*, July 1991, pp. 693 - 698.
281. An Object Oriented Model for Application Specific User Interface Specification (with L. M. Goldschlager and Xiaoyan Su), *Proceedings of 12th New Zealand Computer Science Conference*, August 1991, pp. 197 - 206.

282. A Overflow Technique to Defer Splitting in B-Trees, *Proceedings of 12th New Zealand Computer Science Conference*, August 1991, pp. 81-90.
283. Performance Evaluation of Database Organisation for Skewed Access Profiles (with K. Ranai and H. T. Ch'ng), *Nineteenth Annual Pittsburgh Conference on Modeling and Simulation*, May 1988, pp. 1127 - 1233.
284. On the Identification of Semijoin Sequences in Distributed Query Processing (with B. C. Ooi), *Proceedings of IFIP Conference on Distributed Processing*, Amsterdam, North-Holland, Oct 5 - 7, 1987, Paper no. 7, pp. 1 - 14.
285. Permutation Algorithms and Data Structures for Exploiting Skewness in Data Access (with H. T. Ch'ng), *Proceedings of COMPSAC 87*, IEEE Computer Press, Oct 1987, pp. 439 - 444.
286. Optimise Integrity Checking Using Preprocessing Strategies (with K. K. Chan and Ken J McDonell), *Proceedings of COMPSAC 87*, IEEE Computer Press, Oct 1987, pp. 547 - 553.
287. An Integrity Subsystem - A General and Practical Approach for Integrity Enforcement (with K. K. Chan), *Proceedings of Second Pan Pacific Computer Conference on Information Technology*, IFIP, AFIPS, Aug 1987, pp. 348 - 362.
288. Performance Amelioration of Integrity Enforcement through Preprocessing, (with K. J. McDonell and K. K. Chan), *Proceedings of Canadian Information Processing Society Congress*, May 1987, pp. 57-66.
289. An Implementation Algorithm for Integrity Enforcement (with K. K. Chan), *Proceedings of Second International Conference on Computers and Applications*, IEEE Computer Society, June 1987, pp. 341 - 351.
290. An Implementation Model Using Query Optimization Strategies for Integrity Enforcement (with K. K. Chan), *Australian Computer Science Communications*, Vol. 9, No. 1, Feb 1987, pp. 1 - 13.
291. Query Processing in Distributed Databases Using Semijoin (with B. C. Ooi), *Australian Computer Science Communications* Vol. 8, No. 1 , 1986, pp. 251 - 262.
292. Terminal Support Environment in Local Area Networks (with A. L. Ananda), *Proceedings of Pacific Computer Communication Conference*, Seoul, Oct 1985, North-Holland Pub. Company, pp. 535 - 539. (***selected as the best paper of the conference***).
293. Computer Aided Examination and Evaluation, (with A. L. Ananda and L. S. Hsu), *Proceedings of CALITE 1985*, pp. 409 - 420.
294. Synthesis of Decision Rules- A Tool for Decision Logic Analysis, *Proceedings of First Pan Pacific Computer Conference*, Melbourne, Sep 1985, pp. 287 -300.

295. A Working Model for Stock Cutting Problem (with H. Gunasingham and A. L. Ananda), Proceedings of *CAD-CAM Symposium*, Singapore, 1984, pp. 79-93.
296. Segment Synthesis in Logical Database Design with Respect to Storage Reduction, Proceedings of *14th Annual Convention of CSI*, Jan 1979.

6.6 Research/Technical Reports

1. Update Anomalies and 4NF in Relational Databases - The MVD Case (with M. W. Vincent) Technical Report 92/181, Monash University, March 1993, pp 1- 17.
2. Parameterising the Genetic Algorithms (with D. Ghazfan and M. Nola.), Technical Report 92/07. Computer Technology Department, pp 1-10.
3. A Multi-Parameter Model for Estimating and Tracking of Software Development Project Costs, (with G. Martin) Technical Report 92/01. Computer Technology Department, pp 1-26.
4. Prototyping Tools for distributed applications bases on RPC (with W. Zhao) Technical Report 92/08. Computer Technology Department, pp 1-15.
5. Redundancy and Fourth Normal form in Relational Databases, Technical Report 92/161, Monash University, March 1992, pp 1- 22.
6. Semantic Justification for 4NF in Relational Database Design, Technical Report 92/160, Monash University, March 1992, pp 1- 14.
7. An Overflow Technique to Defer Splitting in B-Trees, Technical Report 91/149, Monash University, Feb 1991, pp 1-26.
8. A Textual Hypertext Toolkit in X (with K. S. O'Yang, L. M. Goldschlager), Research Report 90/145, Monash University, July 1990, pp 1-11.
9. Australian Database Research Pre-Conference Proceedings, Edited by B. Srinivasan and J. Zeleznikow, La Trobe University, Technical Report No. 3/90, Jan 1990.
10. Complexity Comparison of Benchmark Software (with K. Ranai), Research Report, National University of Singapore, June 1988, pp 1-14.
11. Optimal Properties of Semijoin Sequences in Distributed Query Processing (with B. C. Ooi), Research Report, National University of Singapore, Aug 1987, pp 1-15.
12. Performance Amelioration of Integrity Enforcement Through Preprocessing (with K. J. McDonnell and K. K. Chan), Research Report 83, Monash University, Feb 1987, pp 1-19.
13. An Implementation Model for Integrity Enforcement (with K. K. Chan), Research Report 79, Monash University, Dec 1986, pp 1 - 21.

14. A Self Assessment Procedure for Operating Systems, (with J. Rosenberg and A. L. Ananda), Research Report 67, Monash University, Feb 1986, pp 1 - 12 (also revised version as Research Report 88/1, Department of Computer Science, The University of Newcastle, Australia).
15. Self Organising Data Structures for Non-Uniform Access Patterns, Research Report 66, Monash University, Feb 1986, pp 1 - 17.
16. Central Point Theory and its Relation to Systems, (with V. K. Rao), Technical Report, TR-CS-07-82, IIT, Kanpur, 1982.
17. A Design Methodology for the Distributed Databases, Research Report No 5, Computer Applications Division, Asian Institute of Technology, Bangkok, Brisbane, August 1990.
18. On the Shortest Path Algorithms for Sparse Networks, (with V. K. Rao), Research Report No 3, Computer Applications Division, Asian Institute of Technology, Bangkok 1982, pp 1-12.
19. Synthesis of Decision Rules - A Tool to Aid Decision Making, Research Report 3, Computer Applications Division, Asian Institute of Technology, Bangkok, 1981, pp 1-13.
20. Distributed Databases: An Overview and Concepts, Technical Report, TR-CS-03-78, IIT, Kanpur, 1978.
21. Bibliography on Databases, (with R. Sankar), Technical Report, TR-CS-02-78\$ IIT, Kanpur, 1978.
22. STRING - An Extension of Fortran for String Processing, (with V. K. Vaishnavi), Technical Report TR-CS-02-72, IIT, Kanpur, 1975.

7. Innovations in Teaching

- Because of my formal education in Communications and Computer Science, I always willingly participated in developing and delivering a wide spectrum of undergraduate and postgraduate subjects. The subjects range from File Systems and Organisation to Information and Network Security and Data Mining. On an average once in two years I taught at least one new subject. My teaching of subjects relies on hands-on experience. To cite an example, I developed a subject in Data Communication and Computer Networks in 1992 which centered around weekly practical exercises. This offering was acclaimed as the best subject taught to the third year students of Bachelor of Computer Science. This appreciation has contributed towards my promotion to the Associate Professor in that year.
- I took a lead role in developing a number of in-house software products that are used for teaching and research because of my philosophy of teaching. Samples of developed software and course materials include:
 - Extensive database software such as IRA – Instructional Relation Algebra which is a query language for Relational Databases (which is still used) for use by the students in database subjects.

- BIR – A Bayesian Based Image Retrieval test bed to demonstrate various image retrieval techniques and as a test bed for comparing various retrieval strategies. This is being used in the subject on Multimedia Retrieval Systems as well as by a number of research students.
- Development of course guides as early as 1992 (Database course guide and Data Communications and Networks subjects) which is used by other Universities.
- Setting up of a data communication laboratory and devising experiments in consultation with the Electrical Engineering and Computer Systems Department.

8. Research Theses Supervised

1. User Acceptance Model Driven Design (Yandong Fan, PhD, 2009)
2. Delineation of Tumor from Pulmonary Gated PET Images (Aparna Kanakate, Maser of Engineering Research thesis, 2009)
3. A Context-Aware Framework for Intersection Collision Avoidance (Ms Flora Dilys Salim, PhD, 2009)
4. Key Management for Secure Group Applications in Wireless Networks (Yiling Wang, PhD, 2009)
5. Energy efficient event recognition for wireless sensor networks (Baqer, Mohamed, PhD 2008)
6. Mobile query processing incorporating server and client based approaches (Jayaputera, James Winly, PhD 2008)
7. Distributed denial of service attack detection in wireless sensor networks (Baig, Zubair Ahmed, PhD 2008)
8. Collective iterative allocation (Guttman Christian, PhD 2008)
9. Gneralised Relevance Feedback Model for Multimedia Retrieval systems (Zutshi, Samar, PhD 2008)
10. Reconstruction of Quadrics from Two Silhoutettes (Sudanthi N R Wijewickrema, Ph.D 2008) - Associate supervisor
11. User-Centric Modeling for Data Warehoses (Resmi Nair, Ph.D 2008) Associate Supervisor - Dr Campbell Wilson
12. CDHT: A Clustered DHT Communication Scheme for Serverless (P2P) Networks (Wei Ye, Master of Information Technology, 2008) Joint Supervisor with Dr Asad Khan
13. Trusted Transaction Secure Network:Agent Based Distributed Security Control System for Traffic on the Internt (Beny Benyamin Nasution, Ph.D 2007) Associate Supervisor - Dr Asad Khan
14. Mobile Query Processing Incorporating Multiple Non-Collaborative Servers (Say Ying Lim, Ph.D 2007) Joint Supervisor Dr David Taniar

15. Quality of Service Support in IEEE 802.16 Broadband Wireless Access Networks (Ehsan Asadzadeh Aghdaee, Master of Engineering Science, 2007) Joint Supervisor with Dr N Mani
16. Data Broadcasting for Wireless Databases (Agustinus Borgy Waluyo, Ph.D 2006) Joint Supervisor with Dr D Taniar.
17. Optimising QoBiz and QoE in Web Services (Mr Murali Muiyandi, Master of Computing Research Thesis, 2005) - Joint supervisor - S Krishnaswamy
18. Modelling, Design and Analysis of Secure Mobile Payment Systems (Supakorn Kungpisdan, Ph.D 2005) Joint Supervisor with Dr P D Le.
19. Wavelet Based Perceptual Image Quality Measure (Ming Viet Le, Master of Computing Research thesis, 2004) Joint Supervisor with Dr P D Le.
20. Visual Information Retrieval via Inference Networks (C Wilson, Ph.D thesis, 2002).
21. An Object-Oriented Conceptual Model for Spatio-Temporal Specifications in Databases (R. Price, Ph.D thesis, 2002) – **Principal** Supervisor (Prof Rao of Uni. Of Melbourne as associate supervisor).
22. Optimal Multidimensional Storage Organization for Efficient Query Processing in Databases (S Mohammad, Ph.D 2002). Principal Supervisor (Prof Rao of Uni. Of Melbourne as associate supervisor).
23. A Comparative Study of Visualisation Techniques for Data Mining (R. Redpath, Master of Computing, 100% research thesis, 2001).
24. A Context-Based Approach for Mobile Application Development (Luktio Edi Nugroho, Ph.D 2001) Principal supervisor (Prof A S M Sajeev of Uni. Of Newcastle as associate supervisor).
25. A Low-Dimensional Hybrid Model for Content Based Image Retrieval (Santosh Kulkarni, Ph.D 2000).
26. Data Mining by Structure Adapting Neural Networks (Damminda Alahakoon, Ph.D, 2002) – Principal supervisor (Prof S K Halgamuge. Of Uni. Of Melbourne as associate supervisor).
27. Hybrid Indexing Structures for Object Oriented Databases (P Rodrigues, Ph.D, 2000, Uni.of Pondy, India)- as Associate (external) supervisor – this work was supervised during my OSP Jan 1999 – June 2000.
28. Twin Transaction Model for Mobile Databases (Aamir Rahseed, Ph. D, 2000) – Associate Supervisor.
29. Perception Based Image Quality Measure for Compression and Transmission (P D Le, Ph.D, 1999).
30. SR-Tree - A New Indexing Structure for Multidimensional Databases (Mr V N Tran, Master of Computing, 1996).
31. A Framework for Information Retrieval based on Bayesian Networks (Ms M Indrawan, Ph.D, 1998)..
32. Hierarchical Data Structures for Hyperimages (Mr C. Wilson, Master of .Computing Research thesis, 1996).

33. Dichotomy of CASE in supporting Production Software Development (Ms Nancy Eng, Master of. Computing Research thesis, 1996).
34. Efficient Directory Representations (Mr S. Kulkarni, Master of Computing Research thesis, 1995).
35. Migration of Programs in Distributed Computing, (Mr P. D. Le, Master of Computing, Research thesis, 1995).
36. The Semantic Justification for Normal Forms in Relational Database Design (Mr Millist Vincent, Ph.D, Monash University, 1994).
37. Data Allocation in Multiprocessor for Parallel Information Retrieval (Mr Desra Ghazfan, Master of Computing research thesis, Monash University, 1993).
38. Transaction Driven Database Design (Mr Mark Nolan, Master of Computing Research Thesis, 1993).
39. Distributed Application Development through RPC (Mr W. Zhoa, Master of Computing Research thesis, 1993 - Principal Supervisor).
40. The Evolution of a Machine Portable Data Management System for Meteorological and Climatological Data - CICADA (Mr Brain O' Russel, Master of Science research thesis, Monash University, 1993) - Principal Supervisor.
41. A Reconfigurable Browser for Multimedia Systems (Mr Kai O'Yang, Ph.D, Monash, 1990 - withdrew) Principal Supervisor.
42. HITS: A High-level Interaction Technique Specifier for Application Specific User Interfaces (Ms Xiaoyan Su, Ph. D, Monash, 1994) - Principal Supervisor.
43. Integrity Enforcement Mechanisms in Relational Databases (Mr Clement Chan, M.Sc research thesis, Monash, 1987).
44. Automated Selection of Microprocessors for Specific (Control) Applications (Mr Aggarwal, M.Sc, IIT, Kanpur,1982).
45. Automatic Layout Generators (Mr Jesudas, M.Sc, IIT, Kanpur, 1982).
46. Implementation of Query Translator for Relational Database (Mrs Teresa, M.Sc research thesis, AIT, Bangkok, 1981).
47. Computer Aided System Design (M.Sc, IIT, Kanpur,1982).
48. A Decision Support System for Inventory Control (M.Sc, IIT, Kanpur, 1982).

9. Research Grants (in Australia)

Faculty support for Third Australian Database Conference, 1991 \$ 1,000.

A Knowledge Based Verification of Transaction Safety, ARC Small Grant, 1992-
\$15,600.

Architectures for Parallel Symbolic Processing, ARC Large Grant, 1992 –1994 -
\$137,000

Faculty of Computing funds for Integrated Distributed Software Development
Environment 1993 - \$ 17,386

Chair of Computing Development funds, Monash University, 1994-97, \$60,000.

Faculty of Computing funds for Inference Network Based Information Retrieval, 1995 -
\$10,000

Faculty of Computing funds for the Database Conference, 1992 - \$ 1,000.

Australian Database Conference, Australian Computer Society grant, 1991 - \$5,000.

ARC Small Grant for Image Retrieval, 2000 - \$15,000

ARC Small Grant for Image Retrieval , 1997 - \$13,500

ARC Small Grant for Image Retrieval , 1999 - \$13,500

Bayesian based Classification for the web (with Dr Maria Indrawan) – ARC Small Grant
2001 - \$15,000

Data Mining with Structure Adaptive Networks – (with S K Halgamuge, University Of
Melbourne) ARC Large Grant 2001 – 2003, \$140,000

Query Optimisation in Mobile Databases (with David Taniar) - ARC Small Grant 2003,
\$15,000

Location Dependent Queries in Mobile Databases (with David Taniar)- ARC Small
Grant 2005, \$30,000

Collier Charitable Fund for Image Retrieval Research, \$1800 (1996), \$1900 (1997), \$2400
(1999), \$2400 (2000), \$1800 (2001). \$1800 (2007).

EII Networks – ARC funding – \$2.1 M (a collaborative project)

ARC Linkage Grants – 2004 -2007 - \$120,000 for Fruit gradation

ARC Linkage Grant – 2004 – 2007 - \$140,000 for Face Recognition System

ARC Discovery Grant 2009-2011 - \$225,000 for Location Based Query Processing in
Mobile Databases.

Participation in a number of research grants with other staff members (such as MRF,
FITR, industry funds) over the last 10 years.

10. Subset of Administration in the last 15 years

My major administration in the last 10 years was being the Head of three different Schools of the Faculty of Information Technology. In that capacity I have participated in a number of Faculty and University committees such as member of Faculty boards of Faculty of Information Technology, Faculty of Engineering, Academic Board, Faculty Selection and Promotion Committees, etc.

Collegiality and consultation are the main attributes of my management style and I give important to the information flow to the staff of the School. I take time to write Head of the School report to the staff meetings touch upon on all the major issues that are relevant and important to the staff.

I always took a long term view of issues and not perturbed by short term implications. As Head, I took the responsibility of taking hard decisions.

Following is a **subset** of administrative jobs that I have performed in the last 15 years.

Board Member, Faculty of Information Technology Board, 1993 – present and Faculty of Engineering, 2003 -.

Associate Dean for Research for the Faculty of Information Technology, 1996.

Member, Faculty Promotion and Selection Committees (such as the Dean of the Faculty of Information Technology, School staff), 1992 – present (on various occasions).

Member, Research Committee, 1992 - present.

Post Graduate Coordinator, Department of Computer Science, Monash University, 1992 – 1994.

Third Year Computer Science Department Coordinator, Monash University, 1991.

Member, Special Interest Group on Databases, Monash University, 1991- present.

Program Chairman, Third Australian Database Conferences, 1990 - 1992.

Second Year Computer Science Department Coordinator, Monash University, 1990.

Member, Australian Computer Society Database Technical Committee, 1990 –1996.

Chairman of the Program Committee of the Second Australian Database Conference, 1990.

Departmental Seminar Coordinator, 1989 - 1991.

One of the two organisers of the Australian Database Conference, Feb 1991, 1990.

Member of the Faculty of Science Time-Table Committee, Monash University, 1985 - 1987.

Editor, Departmental Research Bulletin, Monash University, 1985 - 1987.

Third Year Computer Science Department Coordinator, Monash University, 1986 - 1987.

11. Selected Professional Activities

My major Professional and Community service are wide and varied ranging from being the Founder and Organiser of the first three annual Australasian Database Conferences to that being an external examiner to the Department of Computer Science, University of West Indies. Because of my academic standing in the area of Databases, I serve as programme committee member of a number of international conferences as well constantly reviewing research papers and projects. On an average I will be spending nearly 15 to 20% of time on professional and community services. The following list provides a **subset** of the spectrum of professional activities that I have participated in the last 10 years.

- **Reviewer for journals that include**
 - Communications of ACM (USA)
 - Acta Informatica
 - Microprocessors and Microsystems
 - Journal of ACM
 - VLDB Journal
 - Information Processing Letters (North Holland Publication)
 - ACM Transactions on Database Systems (USA)
 - IEEE Transactions on Software Engineering (USA)
 - Computer Networks and ISDN Systems (North Holland Publication)
 - Australian Computer Journal
 - Journal of Singapore National Academy of Sciences
 - and Various International Conferences including COMPSAC, IFIP Distributed Processing, SIGMOD, VLDB, DEXA, SIGIR, IEEE organised conferences, Australian Computer Science Conference, Australasian Database Conference, etc.

- Visit to the Division of Computing Applications, Asian Institute of Technology, Bangkok, Thailand to develop courses on Information Systems and Data Structures.
- External Examiner for masters and doctoral research theses at almost all the Australian Universities except Monash University (Monash Staff are not allowed to examine Monash University students' research theses).
- External Examiner for the University of West Indies for the examination of all the subjects in the Bachelor of Science (Computer Science) degree from 2001 and academic advisor and examiner for the Universiti Tunku Abdul Rahmn, Petaling Jaya, Malaysia, 2009-continuing .
- **Membership of Professional Bodies**
 - Voting Member, Association for Computing Machinery.
 - Voting Member, Australian Computer Society.
 - Voting Member, Australian Society for Computers in Learning in Tertiary Education.
 - Member of Database Technical Committee, Australian Computer Society.
- **Conference Organization and Programme Committees**
 - Foundation Chairman and Organiser of the Australasian Database Conference which started in 1990 and has become an annual conference in Australia/Asia.
 - Workshop on Information and Image Retrieval, Database and Expert Systems 98, Vienna, Austria.
 - Programme Committee member of a number of International Conferences on Databases and Computing including Australasian Database Conference, European Database and Expert Systems Conference, International Conference on Multimedia, Neural Networks, USA, System Modelling and Cybernetics, USA, Modelling and Simulation Conf, USA, Artificial Intelligence Conference, Data Mining, Australian Intelligent Information Systems, International Conference on Control, Automation, Robotics and Vision, etc.
 - Organizer and Chairman, Australian Database - Information Systems Conference, Sydney, Feb 1991.
 - Organizer and Program Chairman, Australian Database Conference, Melbourne, Feb 1990.

- Organizer, Australian Workshop on Mobile Computing and Database Applications, 1997.