

## HAKLIN A KIMM

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### RESEARCH INTERESTS

Distributed and Parallel Systems, Ubiquitous Computing and Communications, Automotive Software Engineering, Multilevel Security with Security enhanced Linux

### CURRENT RESEARCH PROJECTS

GPS Tracking Algorithms using GPS and Accelerometer, Application of OpenMP/MPI and Tensorflow programming, Distributed Image forgery detection algorithm, Starvation-free Controller Area Network Protocol

### EDUCATION

- PhD in Computer Science, University of Oklahoma at Norman, spring 1988
- MS in Computer Science, University of Oklahoma at Norman, spring 1985
- BS in Industrial Engineering, University of Korea at Seoul, fall 1979

### ACADEMIC EXPERIENCE

- *ABET Computing Accreditation Commission Program Evaluator*, 2014-Present
- *Full Professor*, Computer Science Department, **East Stroudsburg University**, 2006-Present
- *Visiting Faculty*, Computer Science Department, **University of Guam**, fall 2013
- *Chairperson*, Computer Science Department at East Stroudsburg University, 2008-2010
- *Visiting Faculty*, Computer Science Department, **Korea University**, spring 2008
- *Associate Professor*, Computer Science Department, University of Tennessee, 1994-1999
- *Exchange Visiting Professor*, **Hirosaki University**, Japan, fall 1994
- *Assistant Professor*, Computer Science Department, **University of Tennessee**, 1989-1994
- *Adjunct Assistant Professor*, **Electrical Engineering and Computer Science**, University of Oklahoma, 1988-1989
- *Systems Analyst*, Office of **Institutional Research**, **University of Oklahoma**, 1987-1989
- *Programmer Analyst II*, Office of Institutional Research, University of Oklahoma, 1986-1987

### RESEARCH EXPERIENCE

- *Faculty Lead*, High Performance Computing Lab, East Stroudsburg University, 2017-present
  - *OpenMP/MPI and Tensorflow programming for big data analysis over high performance GPU machine:*
  - *Multiprocessing image forgery detection over cluster of Raspberry Pis and GPU machine*
  - *Autonomous robot arm control with machine learning*
- *Faculty Lead*, Space Systems Software Lab, East Stroudsburg University, 2009-2017
  - *High altitude balloon payload development: real-time communication with ISM band and track analysis*
  - *Fault-tolerant Cube Satellite payload development using controller area network*
  - *Wearable wrist device using GPS and Accelerometer for runners*
  - *GPS tracking algorithms for human behavior*
- *Technology Consultant*, **ETRI IT Convergence Technology**, summer 2015.
  - *Balloon surveillance system with the Closed-circuit television*
- *Senior Computer Scientist*, **Electronics & Telecommunication Research Institute(ETRI)**, summer 2007-2008
  - *Automotive Software Engineering – Automotive Software Architecture*
  - *Controller Area Network for vehicle communication*
- *NASA-ASEE Faculty Research Fellow*, **NASA Goddard Space Flight Center**, Greenbelt, MD, summer 1998
  - *Applying Web Computing in Heterogeneous Environment*
- *Computer Scientist*, Data Systems Research Division, **Oak Ridge National Laboratory**, summer 1992-1993

- *Distributed Misuse Detection System over Oracle database system*
- *Multilevel Security System over SUN Solaris systems*

## HONORS/AWARDS

- **NSF/Intel** Fund for publication and presentation at **EduHPC**, November 2018.
- **NSF CDER *Parallel and Distributed Computing* GRANT**, July 2018.
- **NVIDIA HW Grant for parallel computing research**, May 15<sup>th</sup>, 2016 and 2017.
- Faculty Advisor, **Balloon Satellite Launch with US Naval Academy**, July 18<sup>th</sup>, 2013.
- Faculty Mentor, East Stroudsburg University, 2011-2014
- **NASA Grant to build Cube Satellite System Development**, 2010-2011
- **President Research Awards**, East Stroudsburg University, 2008-2010
- Selected as one of the most important people, ESU Graduating Student Survey, 2009-2014
- **DOE Equipment Fund** for Creating Mobile Wireless Computing Lab, August 2002
- Faculty Development Research Grant, East Stroudsburg University, 1999-2014
- International Society for CATA Recognition Award, San Francisco, CA, April 2002
- **ACM OOPSALA 2001 Educator's Symposium Scholarship**, Tampa FL, October 2001
- ESU Foundation Fund for ESU LINUX USER GROUP, 03/29/2001
- **F.O. Butler Presentation Award**, South Dakota State University, November 2000
- Selected for participating NSF Summer Object/Parallel Workshops, 1994-1996

## PROFESSIONAL SERVICE

- Editorial Board Member
  - *Journal of Advances in Computer Networks*, 2015-present.
  - *Journal of Computer Science Applications and Information Technology*, 2015-Present.
- External PhD Thesis Reviewer for Brunei University, 2015 - present.
  - *Throughput Optimization of Mobile Sensor Networks*
  - *Modular Robotics: Communications and Routing Protocol*
- Invited Reviewer for Natural Sciences and Engineering Research Council of CANADA, 2016 - present
- Invited Reviewer for Quebec Research Fund, CANADA, 2012
- External Tenure/Promotion Reviewer
  - Information and Sciences and Technology, Penn State University at Dunmore, 2012.
  - Computer Science, University of Texas at Permian Basin, 2013
- Invited Reviewer for Quebec Research Fund, CANADA, 2012
  - Space Systems Design and Analysis Laboratory
- Invited Reviewer for NORWAY Research Council, NORWAY, 2003
  - Mobile Common Object Request Broker Architecture (CORBA)
- External Program Reviewer
  - Computer Science program at State University of New York-New Paltz, 2011
  - Computer Science Graduate program at Towson University, MD, 2006
- Organizer of the 1st LinuxWare Workshop, East Stroudsburg, PA, April 2009
- Advisory board member for Lackawanna Community College Gaming and Simulation program, 2009-2016
- Program Vice-chair for the 12<sup>th</sup> International Conference on Computational Science and Engineering, 2009
- Reviewer, Session chair, Committee member for the ACM, IEEE, IASTED, ISCA Journals/Conferences 2000 – present

## UNIVERSITY SERVICE

- University Faculty Mentor, 2011-2014
- Faculty Representative for NASA-MSC Working Group, 2009-2011
- Science Technology Building Committee, 2008-2009
- University Faculty Senate, 2004-2007
- University-wide Committee for Building Science & Technology Center, 2002-2007
- Information Technology Coordinator for the WEDNET, 2002
- Ad hoc committees, Computer Science, 1999-present

## TUTORIALS TAUGHT

- *Introduction to SELinux, International ACM Symposium on Applied Computing*, Seoul, Korea, March 11, 2007.
- *Small Systems Development Tutorial, STC351* at East Stroudsburg University, March 7-11, 2011.

## PRESENTATIONS

1. \* *in the publication list.*
2. *Cube/Small SAT Bus System Development*, NASA MSC Workshop, Wallops Island, VA, May 15<sup>th</sup>, 2012.
3. *Poster presentation – PocoSAT I and II*, USRA Suborbital and Small Satellite Symposium, Washington D.C., March 22, 2012.
4. *CubeSAT University Exhibition*, 25th Annual Small Satellite Conference, Logan city, Utah, August 8-11, 2011.
5. *Reliable Cube/Small SAT Bus System Development and Systems Integration*, NASA MSC Workshop, Wallops Island, VA, May 12<sup>th</sup>, 2011.
6. *Distributed Robot Control*, Stroudsburg High School, Stroudsburg, PA, February 5<sup>th</sup>, 2010.
7. *Java RMI and CORBA: Transformation with Concurrent Use*, California Institute of Technology, CA, August, 2003.
8. *Applications using CORBA and RMI together*, Korea University, June 21, 2003.
9. *Using Javacard*, Sunkgonhoe University, Seoul Korea, June 23, 2003
10. *Using Java with RMI and CORBA*, South Dakota State University, October, 2000.
11. *Using Java Cryptography Class*, Information and Communications University at Daejeon Korea, January 1999.
12. *Secured Information Retrieval System using Java*, Korea University, Seoul Korea, December 17-18, 1998.
13. *Applying Web Computing in Distributed Heterogeneous Environments*, NASA Goddard Space Center, July 1998.
14. *Internet and its applications*, Hirosaki National University at Hirosaki Japan, October 1994.
15. *Information Security*, Samsung Data Systems, Seoul Korea, December 26-28, 1994.
16. *An Approach using Data Distortion in Statistical Database*, ICIAM 91, International Conference on Industrial Conference on Industrial and Applied Mathematics, Washington, D.C., July 1991.

## PEER-REVIEWED PUBLICATIONS

1. *Interdisciplinary Internship Projects Utilizing Legacy Robotic Equipment under Budget Constraints at a Small-sized Institution\**, with Alexander Chaffer, *Proceedings of the IEEE Princeton STEM Education Conference*, Princeton, New Jersey, March 16, 2019.
2. *Modelling and Verification of Non-Starvation Bitwise Arbitration Technique for Controller Area Network Using SPIN Promela\**, with Hanke Kimm, *Springer Series in Advances in Intelligent Systems and Computing*, Phuket, Thailand, January 4-6, 2019.
3. *Introducing Three Basic Parallel Computation Concepts to First Year Computer Science Students\**, with Sukhamay Kundu, *ACM/IEEE Workshop on Education for High Performance Computing (EduHPC-2018)*, Dallas, Texas, November 10-11, 2018.
4. *Adaptive Design and Analysis of Starvation Free Controller Area Network for Multi-Robot System: Barrier Synchronization Technique Applied\**, with Hanke Kimm, *Proceedings Series by ACM of the 6th International Conference on Control, Mechatronics and Automation*, Tokyo, Japan, October 12-14, 2018.
5. *Web-Based Malware Mitigation with a Virtualized Web-Browser: A Comparison Study*, with Neely, Waldman and Burns, *Proceedings of the IEEE 15th International Conference on Dependable, Autonomic and Secure Computing*, Orlando, Florida, November 6-10, 2017.
6. *SCADIS: Supporting Reliable Scalability in Redis Replication on Demand\**, with Li and Kimm, *Proceedings of the IEEE 2nd International Conference on Smart Cloud*, New York, November 3-5, 2017.
7. *Parallel Longest Common Sequence Algorithm on Multicore Systems Using OpenACC, OpenMP and OpenMPI\**, Li and Akashadeep, *Proceedings of the IEEE 11th International Symposium on Embedded Multicore/Many-core Systems-on-Chip and Communications*, Seoul, Korea, September 18-20, 2017.
8. *Comparative Study on Edge Detection Algorithms using OpenACC and OpenMPI on Multicore Systems\**, Li and Akashadeep, *Proceedings of the IEEE 11th International Symposium on Embedded Multicore/Many-core Systems-on-Chip and Communications*, Seoul, Korea, September 18-20, 2017.
9. *Improved Track Path Method in Real Time by Using GPS and Accelerometer\**, with Hanke Kimm, *Proceedings of the IEEE 15th International Conference on Ubiquitous Computing and Communications*, Granada, Spain, December 14-16, 2016.
10. *Android Payload System Development for High-altitude Balloons: Capturing Periodic Images along with GPS and Sensor Data\**, *Proceedings of the IEEE XXIII International Congress on Electronics, Electrical Engineering and Computing*, Piura, Peru, August 2-5, 2016.

11. *Interdisciplinary Science Project on Student Learning: Synchronization Problems in Computer Science\**, *Proceedings of the International Conference on New Perspectives in Science Education, Florence, Italy, March 17-18, 2016.*
12. *Real Time Data Communication Using High Altitude Balloon Based on Cubesat Paylaod*, with J. Kang, B. Bruinga and H. Ham, *Journal of Advances in Computer Networks*, Vol. 3, No. 3, September 2015.
13. *Preliminary version of Real Time Data Communication Using High Altitude Balloon\**, *Proceedings of the 7th International Conference on Computer Engineering and Technology, Paris, France, April 13-14, 2015.*
14. *Payload System Development for High Altitude Balloon\**, *Proceedings of the 2014 IEEE/SICE International Symposium on System Integration, Tokyo, Japan, December 13-15, 2014.*
15. *Comparative Evaluation of Edge linking Methods Using Markov Chain and Regression Applied Heuristic*, with N. Abolhassani and E. Lee, *Lecture Notes in Computer Science Volume 8827, Springer Berlin Heidelberg*, pp 1014-1021, 2014.
16. *Controller Area Network for Fault Tolerant Small Satellite System Design\**, with M. Jarrell, *Proceedings of the 23rd IEEE International Symposium on Industrial Electronics, Istanbul, Turkey, June 1-4, 2014.*
17. *Edge Detection and Linking Pattern Analysis Using Markov Chains*, with N. Abolhassani and F. Lee, *Proceedings of the 13th IEEE International Symposium on Advances in Computer and Information Technology, Sydney, Australia, December 3-5, 2013.*
18. *Efficient Large Data Transfer over Interprocess Communication Method*, with E. Gho, H. and I. Lee, *Proceedings of the 3rd International Conference on Advanced Computing and Communications, Los Angeles, CA, September 25-27, 2013.*
19. *Interdisciplinary Capstone Group Project: CubeSat System Development in a Small-sized Institution\**, *Proceedings of the International Conference on New Perspectives in Science Education, Florence, Italy, March 14-15, 2013.*
20. *Transfer Technique of Large Messages over Controller Area Network*, with M. Jarrell, S. Kendall, C. Fitzpatrick, I. and H Lee, *Proceedings of the 28th International Conference on Computers and Their Applications, Honolulu, Hawaii, March 4-6, 2013.*
21. *Implementation of Networked Robot Control System over Controller Area Network\**, with J. Kang, *Proceedings of the 9th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI 2012), Daejeon, Korea, November 26-29, 2012.*
22. *Multilevel Secure Database on Security Enhanced Linux for System High Distributed Systems*, with N. Sherpa, *Lecture Notes in Computer Science 7690, Springer Berlin Heidelberg*, pp. 358-370, 2012.
23. *Implementation of a Multilevel Secure Database on Security Enhanced Linux: SELinux PostgreSQL\**, with N. Sherpa and C. Ryu, *Proceedings of the 13th International Workshop on Information Security Applications, Jeju Island, Korea, August 16-18, 2012.*
24. *Performance Analysis on Edge Detection Algorithms for Coastline Image Detection\**, with N. Abolhassani, *Proceedings of the 10th IASTED International Conference on Visualization, Vision and Image Processing, Banff, Canada, July 3-5, 2012.*
25. *Multifunction GPS Embedded Wrist Device for Runners*, with S. Kendall and M. Jarrell, *Proceedings the 16th IEEE International Symposium on Computer Electronics, Harrisburg, PA, June 2-4, 2012.*
26. *Distributed Event-Triggered Robot Control System over Controller Area Network\**, *Proceedings the 2012 IEEE International Conference on Industrial Technology, Athens, Greece, March 19 - 21, 2012*, pp. 533-537.
27. *Dynamic Programming Approach on Pipelined Optical Bus Systems for Finding a Longest Upsequence*, with F. Lee, *Proceedings the IEEE International Conference on Control System, Computing and Engineering, Penang, Malaysia, November 25 - 27, 2011.*
28. *Broadcast Analysis of Spanning Tree Flooding Algorithm for Mobile Ad Hoc Networks\**, with A. Engle and F. Lee, *Proceedings of the 2011 ACM International Conference on Ubiquitous Information Management and Communication, Seoul, Korea, February 21-23, 2011.*
29. *Integrated Fault Tolerant System for Automotive Bus Networks\**, with H. Ham, *Proceedings of the 2010 IEEE International Conference on Computer Engineering and Applications, Bali, Indonesia, March 19-21, 2010*, pp. 486-490.
30. *Failure Management Development for Integrated Automotive Safety Critical Software Systems\**, with H. Ham, S. Shin, C. Sung, *Proceedings of the 2009 ACM/SIGAPP Symposium on Applied Computing, Honolulu, USA, March 8-12, 2009*, pp. 517-521.
31. *Development of Fault Tolerant Linux Kernel 2.6 with Backward Error Recovery*, with S. Shin, H. Park and J. Hong, *International Journal of Information, Volume 11, No. 5, September 2008.*
32. *Implementation of the Distributed Hash Tables on Peer-to-peer Networks\**, with M. Dougherty and H. Ham, *Proceedings of the 2008 IEEE Sarnoff Symposium, Princeton, NJ, April 28-30, 2008.*
33. *Implementation of a Pairwise Sequence Alignment Algorithm on a Distributed Java Environment*, with G. Miller and H. Lee, *Proceedings of the 21st International Conference on Computers and Their Applications, Cancun, Mexico, March 2008*, pp. 34-38.

34. *Redundant Dominating Set Routing Algorithm for Ad hoc Networks*, Proceedings of the International Conference on Technology and Information Convergence, Anaheim, CA, November 5-7, 2007.
35. *Constant-time Record Management in a Java Embedded Small Device*, [Communications in Computer and Information Science, Volume 5, Springer Berlin Heidelberg](#), December, 2007, pp.66-74.
36. Preliminary version of *Constant-time Record Management in a Java Embedded Small Device\**, Proceedings of the Asia Simulation Conference 2007, October 10-12, 2007. pp. 85-93.
37. *A Global On-demand Routing Protocol for Mobile Ad hoc Networks*, with F. Lee and C. Reinhart, Proceedings of the 6<sup>th</sup> [IEEE International Symposium on Network Computing and Applications](#), Cambridge, MA, July 12-14, 2007, pp. 261-264.
38. *Evaluation of Interval-based Dynamic Voltage Scaling Algorithms on Mobile Linux System\**, with S. Shin and C. Sung, Proceedings of the 2007 [ACM/SIGAPP Symposium on Applied Computing](#), Seoul, Korea, March 11-15, 2007, pp. 1141-1145.
39. *Energy Efficient Use in Mobile Devices Based on Dynamic Voltage Scaling\**, with M Ivanov, Proceedings of the International Symposium on [Performance Evaluation of Computers and Telecommunication Systems](#), Calgary, Canada, July 30 - August 3, 2006, pp. 319-326.
40. *The Overhead Model of Word-level and Page-level Incremental Check Pointing*, with J. Heo, Y. Cho and G. Jeon, Proceedings of the 2006 [ACM/SIGAPP Symposium on Applied Computing](#), Dijon, France, April 24-27, 2006.
41. *Applying a Multi-level Security Mechanism to a Network Address Translation Scheduler\**, with A. McDonald, H. Lee and I. Lee, Proceedings of the 21st International Conference on Computers and Their Applications, Seattle, WA, March 23-25, 2006.
42. *Longest Common Sequence Problem on Pipelined Optical Bus Systems\**, Proceedings of the 18th International Conference on Parallel and Distributed Computing Systems, Las Vegas, NV, September 2005, pp. 275-280.
43. *A Unified Hardware/Software Approach for Reducing Context Switching Time with Multiple Tasks\**, with H. Lee and I. Lee, Proceedings of the 18th International Conference on Parallel and Distributed Computing Systems, Las Vegas, NV, September 2005, pp. 212-217.
44. *Two Approaches to improve Java MIDP Record Management System in Wireless Devices*, with C. Shim and S. Shin, Proceedings of the 2005 [IEEE International Electro/Information Technology Conference](#), Lincoln, NE, May 22-25, 2005.
45. *Efficient Use of Java MIDP Record Management System in Wireless Devices\**, with S. Shin, Proceedings of the 2005 [IEEE Sarnoff Symposium](#), Princeton, NJ, April 18-19, 2005.
46. *Algorithm for Reducing Complexity of Switching Time in Real-Time Multitask Environments*, with H. Lee and I. Lee, Proceedings of the 20<sup>th</sup> International Society for Computers and Their Applications, New Orleans, LA, March 20-23, 2005.
47. *Speculation in Solving Maximal Elements Problems on the Pipelined Optical Bus Systems with Various Processor Arrays*, [International Journal of Information](#), Volume 7, No.4, July 2004, pp. 537-542.
48. *Reliable Transformation between Java RMI and CORBA Programs\**, Proceedings of the 19<sup>th</sup> International Society for Computers and Their Applications, Seattle, WA, March 18-20, 2004, pp. 216-219.
49. *Longest Repeated Suffix Problem on the Arrays with Pipelined Optical Bus Systems\**, with D. Seme, Proceedings of the 35<sup>th</sup> [IEEE SEC Symposium on System Theory](#), Morgantown WV, March 2003, pp. 69-73.
50. *Architecture for Confidential Information Retrieval in Health Care Organizations*, with J. Rhi, [Journal of Personal Data Protection](#), Korea Information Security Agency, December 2002, pp. 1-12.
51. *Distributed Object System with the Concurrent Use of CORBA and RMI\**, Proceedings of the 17<sup>th</sup> International Society for Computers and Their Applications, San Francisco, CA, April 4-6, 2002, pp. 491-494.
52. *Java RMI-based Data Distortion Method for Securing Confidential Data*, [International Journal of Information](#), Japan, October 2001, pp. 435-444.
53. *Dense Wavelength Division Multiplexing for Optically Interconnected Linear Array Processors\**, [Computing and Information Technologies: Exploring Emerging Technologies](#), [World Scientific Publishing](#), River Edge, NJ, 2001, pp. 143-150.
54. *A Distributed Data Distortion Method for Securing Confidential Data\**, Proceeding of the 16<sup>th</sup> International Society for Computers and Their Applications, Seattle, WA, March 28-30, 2001, pp. 437-440.
55. *A Framework for Distributed Knowledge Discovery System over Heterogeneous Networks using CORBA\**, with T. Ryu, Proceedings of the [International ACM workshop on Distributed and Parallel Knowledge Discovery](#), Boston, MA, August, 2000, pp. 86-91.
56. *Clustered Computer Architecture for Automated Database Query Generation System*, with T. Ryu, Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, ND, June 2000.
57. *Two Dimensional Maximal Elements Problem on a Mesh with Pipelined Optical Bus System\**, Proceeding of the 15<sup>th</sup> International Society for Computers and Their Applications, New Orleans, LA, March 29-31, 2000, pp. 215-218.
58. *Partitioning a Cluster of Binary deBruijn Networks Using MPI\**, with B. Joshi, Proceedings of the 14<sup>th</sup> International

- Society for Computers and Their Applications, Cancun, Mexico, April 6-9, 1999, pp. 392-395.
59. *Using Constructors and Subclasses in Java and C++\**, with F. Lee and D. Sang, Proceedings of the 14<sup>th</sup> International Society for Computers and Their Applications, Cancun, Mexico, April 6-9, 1999, pp. 180-183.
  60. *Parallel Algorithm for Finding Total Crossing Numbers in a Channel Using MPI\**, with F. Lee, Proceedings of the Fourth International Conference on Computer Science and Informatics, Research Triangle Park, NC, October 23-28, 1998, pp. 46-49.
  61. *A Load Balancing Algorithm for Binary deBruijn Networks\**, with B. Joshi, Proceedings of the 30th IEEE SEC Symposium on System Theory, Morgantown WV, March 1998.
  62. *Two Dimensional Maximal Elements Problem on a Reconfigurable Optical Pipelined Bus System\**, Proceedings of the 1998 ACM/SIGAPP Symposium on Applied Computing, Atlanta GA, February 1998, pp. 623-627.
  63. *Maximal Independent Set of Permutation Graphs on a Reconfigurable Optical Pipelined Bus System\**, Proceedings of the 9th International Conference on Parallel and Distributed Computing Systems, Washington, D.C., October 1997, pp. 107-112.
  64. *Maximum Crossing Number Algorithm on a Linear Array with a Reconfigurable Pipelined Bus System\**, Proceedings of the 35th Annual ACM SEC Conference, Murfreesboro, TN, April 1997, pp. 60-62.
  65. *Parallel Total Weight Crossing Number Algorithm for Channel Routing on a Linear Array with a Reconfigurable Pipelined Bus System\**, Proceedings of the 29th IEEE SEC Symposium on System Theory, Cookeville, TN, March 1997, pp. 183-187.
  66. *Inversion Number Algorithm on the PVM System\**, with F. Lee, Proceedings of the Third International Conference on Computer Science and Informatics, Research Triangle Park, NC, March 1997, pp. 117-120.
  67. *Inversion Number Algorithm on a Linear Array with a Reconfigurable Pipelined Bus System\**, Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, Sunnyvale, CA, August 1996, pp. 1398-1408.
  68. *Parallel Algorithm for Wiring Two-terminal Nets in the Knock-knee Mode\**, Proceedings of the 28th IEEE SEC Symposium on System Theory, Baton Rouge, LA, March 1996, pp. 406-410.
  69. *Parallel Algorithm for Via Minimization in VLSI Routing\**, Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, Athens GA, November 1995, pp. 240-247.
  70. *Integrated Multilevel Secure System for Information Retrieval in Distributed Computer Systems*, with J. Rhi, Proceedings of the 12<sup>th</sup> IEEE International Conference on Computer Communication, Seoul, Korea, August 1995
  71. *Parallel Algorithm for a Domination Problem in Weighted Permutation Graphs\**, Proceedings of the International Symposium on Parallel Architecture, Algorithms and Networks, Kanazawa, Japan, December 1994, pp. 47-52.
  72. *Parallelized Inversion Number Algorithm for VLSI Routing\**, Proceedings of the 32nd Annual ACM Southeast Conference, Tuscaloosa AL, March 1994, pp. 97-102.
  73. *Information Retrieval Tool in Multilevel Secure Environments*, with R. Chester, J. Griffiths and K. Kertis, Tech Report, Martin Marietta Energy Systems, INC., Oak Ridge National Lab., July 1993.
  74. *Prototype for Information Retrieval in Heterogeneous Distributed Multilevel Secure Systems*, Tech Report, Martin Marietta Energy Systems, INC., Oak Ridge National Lab., July 1993.
  75. *A Modified Algorithm for the Longest Upsequence Set Problem\**, Proceedings of the 31st Annual ACM Southeast Conference, Birmingham AL, April 1993, pp. 319-322.
  76. *Program Transformation for the Longest Upsequence Set Problem\**, Proceedings of the 1993 ACM/SIGAPP Symposium on Applied Computing, Indianapolis, IN, February 1993, pp. 609-613.
  77. *Distributed Secure Remote Database Entry Prototype*, with G. Zobrist and N. Swain, K/DSRD-1130, Martin Marietta Energy Systems, INC., Oak Ridge National Lab., July 1992.
  78. *A Misuse Detection System on Database Systems*, K/DSRD-1127, Martin Marietta Energy Systems, INC., Oak Ridge National Lab., July 1992.
  79. *A Data Distortion Method in the Distributed Data Processing Systems*, the 20th Annual ACM Conference, Kansas city Kansas, March 1992.
  80. *Economical Predictive Testing in Manufacturing Electronic Circuits*, with A. Nanthakumar, Economics of Design and Test for Electronic Circuits and Systems, Ellis Horwood, England, July 1992.
  81. Preliminary version of *Economical Predictive Testing in Manufacturing Electronic Circuits*, Proceedings of the 1st International Workshop on The Economics of Design and Test, Austin TX, September 1991.
  82. *Bottom-up Distortion Method in Statistical Database*, with A. Nanthakumar, Proceedings of the 22nd Annual Pittsburgh Conference on Modeling and Simulation, Pittsburgh PA, May 1991, pp. 1050-1056.
  83. *A Parallel Algorithm for Finding Crossing Numbers of Channel Routing\**, Proceedings of the 19th Annual ACM Conference, San Antonio TX, March 1991, pp. 665-666.
  84. *Finding a Maximum Independent Set in a Permutation Graph*, Information Processing Letters 36 (1990) 19-23, October

1990. \*

85. Preliminary version of *Finding a Maximum Independent Set in a Permutation Graph\**, [Proceedings of the 28th Annual ACM Southeast Conference](#), Greenville SC, April 1990.
86. *An Application Algorithm for the Via Minimization Problem in Channel Routing\**, [Proceedings of the 1990 ACM/SIGAPP Symposium on Applied Computing](#), Fayetteville AK, April 1990.
87. *An Efficient Algorithm For Domination in Permutation Graphs*, with C. Rhee, S.K. Dhall and S. Lakshmivarahan, [Proceedings of the 27th Annual Allerton Conference on Communication, Control and Computing](#), Monticello IL, September 1989, pp. 68-71.
88. *A Conflict Resolution Algorithm for Channel Routing\**, [Proceedings of WOCN-INFOR 89](#), Seoul, Korea, June 1989, pp. 298-301.
89. *An Efficient Algorithm for Finding a Maximum River-routable Set of Nets in a Channel\**, with T. Tuan. [Proceedings of the Twenty-second Annual Princeton Conference on Information Science and Systems](#), Princeton NJ, March 1988, pp. 896-898.

#### **COURSES TAUGHT**

Mobile Computing (Grad)

Computer Networks (Grad/Under)

Distributed Object Programming (Grad /Under)

Operating Systems using Linux (Under)

Object-Oriented Programming

Assembly Language using IBM / PC

Artificial Intelligence using Prolog/Neural nets

Programming Language and Theory

Embedded Systems (Grad)

Computer Architecture (Grad/Under)

Advanced Operating Systems (Grad)

Probability for Computer Science (Under)

Parallel Computing using PVM/MPI

Database Systems

Data Structure and Algorithms