

# RESUME

(Curriculum Vitae)

## ISAAC D. SCHERSON

Professor

Dept. of Computer Science (Systems)  
The Donald Bren School of  
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### Personal

**Date and Place of Birth:** February 12th, 1952. Santiago, Chile.  
**Citizenship:** USA.  
**Languages:** Speaks, Reads and Writes: English, French, Spanish, Hebrew.  
**Marital Status :** Married, two children.

### Education

**Ph.D.** Dept. of Applied Mathematics, Weizmann Institute of Science, Rehovot, Israel, 1983.  
**Thesis:** Multi-Operand Associative Processing and Application to Tomography and Computer Graphics.

**M.S.E.E.** Division of Graduate Studies, Faculty of Engineering. National University of Mexico, 1976.  
**Thesis:** System Identification Algorithms for Microcomputers.

**B.S.E.E.** Electrical and Mechanical Engineering. Faculty of Engineering. National University of Mexico, 1975, Highest Honors.  
**Thesis:** A Hardware Logic Functions Simulator

## Employment History

### Academic

- Current:** Full Professor, Dept. of Computer Science (Systems), The Donald Bren School of Information and Computer Sciences, and Dept. of Electrical Engineering and Computer Science, The Henry Samueli School of Engineering, University of California, Irvine.
- Conseillier Scientifique to France Télécom R&D
- 2004** (January-July) Visiting Scientist, IRISA-INRIA Rennes. (While on Sabbatical from UCI)
- 1997** (January-July) Professeur Invité, Université Pierre et Marie Curie, Paris 6. (While on Sabbatical from UCI.)
- 1994-2000** Director, Irvine Research Unit in Advanced Computing, University of California, Irvine.
- 1994** Promoted to Full Professor, University of California, Irvine.
- 1990-1994** Associate Professor, University of California, Irvine.
- 1988-1990** Assistant Professor, Electrical Engineering, Princeton University.
- 1983-1987** Assistant Professor, Electrical and Computer Engineering, University of California, Santa Barbara.
- 1978-1982** Teaching Assistant, Department of Applied Mathematics, Weizmann Institute of Science, Rehovot, Israel.
- 1975-1977** Academic Technician, Graduate School of Engineering, National University of Mexico.
- 1974-1975** Deputy Coordinator for Linear Algebra section, Department of Mathematics, School of Engineering, National University of Mexico.
- 1971-1976** Part-time Lecturer, Department of Mathematics, School of Engineering, National University of Mexico.

### Industrial

- 2003** Collaboration with a French Regional Promotion Agency. Marketing of the French northern region to high level scientists and entrepreneurs.
- 2000-** Expert Witness, Strategy advisor in technology related litigation.
- 1999-2000** High-Tech Start-up Proposal Evaluations for Investors.
- 1994-1995** Speaker/Lecturer at Cray Research's sponsored meetings and/or conferences as part of a marketing, sales and public relations effort.
- 1993-1994** Consultant on Optical Interconnects, Hughes Research Laboratories. Study of computing capabilities of a 3D parallel computer.
- 1993-1995** Consultant in the preparation of research and development proposals submitted to US Government agencies, MasPar Computer Corporation.

- 1986-1987** Consultant, Galagraph Inc., Sunnyvale, California. Product definition, marketing and sales support, product development (hardware and software): High Resolution graphics in PC-based workstations.
- 1982-1985** Scientific Adviser, TAT Advanced Technology, Gedera, Israel. Product Definition. Identification of market needs in the field of High Performance/Resolution Graphics for PC-based workstations. Development of Advanced Graphics Controllers for Microcomputers
- 1979-1981** Scientific Adviser, TAT Aeroequipment, Ltd., Gedera, Israel. Development of Fault-Tolerant Digital Systems for Fuel Management in Aircraft (Main system architect and designer).
- 1975-1976** Development of a digital microprocessor-based controller for a Hydro-forming Machine. Main Architect and Designer.

## **Fields of Research Activity**

Clusters and Servers, Concurrent Computing, Parallel Processing Architectures and Servers, Operating Systems and Environments for Parallel and Distributed Processing, Resource Management (Scheduling and Load Balancing), Interconnection Networks for High Performance Computers, Embedded Systems on-chip Networks, Associative Memory and Processing, Massively Parallel Computer Architectures, Computer Graphics, Algorithms and their Complexity, VLSI, Microprocessor based Digital Control Systems in Hostile Environments.

## **Experience**

Over 20 years of industrial experience in the development of military and commercial digital systems, in particular for airborne systems and in high resolution computer graphics. Started teaching career at age 19 at the National University of Mexico. Since 1983 committed to an academic career in teaching and research; four years at the University of California, Santa Barbara, four years at Princeton University, and, since 1990, at the University of California, Irvine. Kept strong ties to the industrial sector by working on numerous consulting assignments in the USA and abroad.

## **Biography**

Isaac D. Scherson was born in Santiago, Chile, on February 12, 1952. He is currently a Professor in the Department of Computer Science (Systems) of The Donald Bren School of Information and Computer Sciences, and in the Department of Electrical Engineering and Computer Science of the Henry Samueli School of Engineering at the University of California, Irvine. In addition, he is “Conseiller Scientifique” to France Télécom Research and Development, Issy les Moulineaux, France. He received BSEE and MSEE degrees from the National University of Mexico (UNAM) and a Ph.D. in Computer Science from the Dept. of Applied Mathematics of the Weizmann Institute of Science, Rehovot, Israel. He held faculty positions in the Dept. of Electrical and Computer Engineering of the University of California at Santa Barbara (1983-1987), and in the

Dept. of Electrical Engineering at Princeton University (1987-1991). He is a member of the IEEE Computer Society and of the ACM. Dr. Scherson has contributed to numerous professional workshops and conferences as chair, co-chair and/or member of the Steering and/or of the Technical Program Committees. Since 1992, he also serves as a member of the IEEE Technical Committee on Computer Architecture (TCCA) and the IEEE Technical Committee on Parallel Processing (TCPP). The author of numerous technical articles, Dr. Scherson also edited a Frontier's 92-workshop book as well as an IEEE Tutorial on Interconnection Networks (1994 and currently in its second edition) and was the Guest Editor of the Special Issue of The Visual Computer on Foundations of Ray Tracing (June 1990.)

Parallel to his academic career, Dr. Scherson kept strong ties with the industrial private sector and participated as a consultant in the conception and design of a number of high-tech systems.

His research interests include concurrent computing systems, interconnection networks for embedded systems, resource management, operating systems for concurrent computers, massively parallel computer architectures, interconnection networks, computer graphics, algorithms and their complexity and VLSI. Dr. Scherson's research has been funded by NASA's JPL, NASA GSFC, the NSF, the AFOSR, the state of California MICRO program and other industrial sources.

## Honors, Awards and Professional Societies

- “Conseiller Scientifique” to France Télécom R&D.
- Elected to the Eta Kappa Nu Electrical Engineering Honor Society
- Member of the IEEE Computer Society.
- Member of the ACM SIGARCH and SIGGRAPH.
- Winner of the Outstanding Paper Award at the International Conference on Parallel Processing, August 1990. Award conferred for the paper;  
Isaac D. Scherson, *Orthogonal Graphs and the Analysis and Construction of a Class of Multistage Interconnection Networks*, Proceedings of the 1990 International Conference on Parallel Processing, August 1990.
- Member of the IEEE Computer Society Technical Committee on Computer Architecture.
- Member of the IEEE Computer Society Technical Committee on Parallel Processing.

## Selected Invited Lectures and Presentations

- *The Convergence of Computing and Mechanical Engineering*, ESIME, IPN, Mexico, DF, September 7 2004
- *Research and Higher Education in the USA*, École Nationale Supérieure, June 15<sup>th</sup> 2004, Rennes, France.
- *Reliable Load Balancing for Cluster Computing in Space*, Universität Ulm, Ulm, Germany, May 12<sup>th</sup>, 2004.
- Invited Lecture, *Measuring Beyond FLOPS: A Seminar on Performance Evaluation*, IRISA, Rennes, France, January 13, 2004.
- Keynote Tutorial, *Reliable Computing in Space*, Conference of the Chilean Computer Science Society, Chillán, Chile, November 4 2003.

- Invited Keynote Lecture, *Modeling Resource Management in Concurrent Computing Systems*, Second NATO ARW on Concurrent Information Processing and Computing, Sinaia, Romania, July 5–10 2003.
- Invited Seminar at the Centro de Investigación y de Estudios Superiores de Ensenada (CICESE), October 2002.
- Invited Lecture on Interconnection Networks, University of Paris VI, Paris, France, March 2002.
- Invited Computer Science – Computer Engineering Lecture, *Reliable Computing in Space*, UCSB, December 2001.
- Inaugural Lecture, Conference On Principles of Distributed Systems (OPODIS). December 2001, Manzanillo, Mexico.
- Keynote Address, CIC2001, November 15 2001. Mexico City Mexico.
- Invited Plenary Presentation, “*Computers and Computing in Space*”, Bridging the Digital Divide, Toronto, Canada, November 3-4, 2001.
- Keynote Lecture, Cluster Computing in Space, NATO Advanced Research Workshop, September 1-6, 2001, Mangalia, Romania.
- Invited Lecture Series, Interconnection Networks for Massively Parallel Computers, University of Paris VI. February 2001.
- Invited Lecture, University of Lille, October 2000.
- Invited Lecture, University of Paris, February 1999.
- Invited Master Lecture, SOMI XIII Instrumentation Conference. Ensenada, Mexico, October 5-9, 1998.
- Invited Master Seminar at the Parallel Computing Week, National Nuclear Research Institute, Salazar, Mexico, June 1-5, 1998.
- Invited Lecture/Address. Workshop on New Trends in Scheduling in Parallel and Distributed Systems. Aussois, France. June 15-19, 1998.
- Distinguished Lecture, Ordinateurs Parallèles: de l'Architecture au Système, University of Paris VI, March 1998.
- Distinguished Lecture. CICESE. Ensenada Mexico, February 1998.
- Invited Master Seminar and Keynote Address, International Computing Symposium, New Applications and Technological Innovation in Computing, National Polytechnic Institute, Mexico, November 12-14, 1997.
- Invited Lecture/Seminar, Scheduling in Massively Parallel Systems, Université de Grenoble, Grenoble, France, March 1997.
- Invited Lecture. CNRS Summer School on Placement and Load Balancing, July 1-5, 1996, Presqu'Ile de Giens, France.
- Invited Short Course. Parallel Processing: A Research Perspective. University of Paris - Jussieu, February 1996.
- Distinguished Lecture. University of Bordeaux, November 1995.
- Keynote Lecture. University of Paris, Workshop on Load Balancing, May 1995.
- Invited Lecture. LATIN'95: Latin American Theoretical Informatics, Santiago, Chile, April 1995.
- Distinguished Lecture. University de Lille, December 1994.
- Distinguished Lecture. XIV International Conference of the Chilean Computer Society, Concepcion, Chile, October 31 - November 4, 1994.

- Distinguished Lecture. UNAM, Mexico City, Mexico, October 1994.
- Distinguished Lecture. CIIE'94, 1st Interactive Congress on Electronics Mexico City, Mexico, October 17-19, 1994.
- Distinguished Lecture. SuperComp 94, Porto Alegre, Brazil, September 12-14, 1994.
- Distinguished Lecture and Tutorial, IEEE/USP International Workshop on High Performance Computing, Sao Paolo, Brazil, March 28-30, 1994.
- Distinguished Lecture and Tutorial, International Symposium on High Performance Computing, Universidad de Chile, December 1993.
- Distinguished Seminar: Dept. of Computer Science, University of Chile, Santiago, Chile, July 1993.
- Keynote Speaker and Distinguished Seminar Speaker: Chilean Workshop on Systems Engineering, School of Industrial Engineering, University of Chile. July 1993.
- Distinguished Lecture. Universite de Lille. Lille, France, June 1993.
- Distinguished Lecture. Etablissement Technique Central de l' Armement (ETCA.) Paris, France, June 1993.
- Distinguished Lecture. University of Paris (Jussieu), Paris, France, June 1993.
- Distinguished Lecture. University of Wroclaw, Poland, May 1993.
- Panel Speaker. Polish-American Symposium on Models for High Speed Computing, Warsaw, Poland, May 1993.
- Guest Lecture, Thinking Machines Corporation, Boston, MA, May 1992.
- Distinguished Lecture. George Washington University. Washington, DC, March 1991.
- Distinguished Lecture. University of Colorado. Fort Collins, CO, March 1991.
- Invited Lecture. Purdue University, West Lafayette, Indiana, October 1989.
- Distinguished Lecture. Rutgers University. New Brunswick, NJ, January 1989.

### **Other Professional Activities (Editorial Boards, Conference Committees, etc.)**

- Conference General Chair, The Second NATO ARW on Concurrent Information Processing and Computing, Sinaia, Romania, July 5–10 2003.
- General Chair, Conference on Parallel Computing Systems, Iasi, Romania, July 2004.
- Program Committee Member, Computer Simulation Conference, April 2002.
- Program Committee Member, Cluster 2001, Newport Beach, California, October 2001.
- Workshops Chair, High Performance Computer Architectures (HPCA-7), January 2001.
- Member of the Editorial Board of the Journal of Interconnection Networks (JOIN), World Scientific Publishing Company (WSPC), United states (New Jersey), Britain (London), Hong Kong, and Singapore.
- General Chair, 2nd International Conference on Parallel Computing Systems, Ensenada, Mexico, August 1999.
- Member of the Program Committee, ISPAN 99, Australia, August 1999.
- General Chair. Workshop on "Research Perspectives in Computational Science", Ensenada, Mexico, April 24, 1998.
- Chair of the Program Committee for the XV International Conference of the Chilean Computer Science Society, Arica, Chile, November 1-3, 1995.

- Member of the Program Committee for PDCS 95, Seventh International Conference on Parallel and Distributed Computing and Systems, Georgetown University, Washington, DC, October 18-21, 1995.
- Member of the Program Committee for LATIN'95: Latin American Theoretical Informatics, Universidad Técnica Federico, Santa Maria, Valparaíso, Chile, April 3-7, 1995.
- Member of several Ph.D. Thesis Committees at the University of Paris VI - Jussieu, University of Paris-Sud (Orsay), University of Lille, 1994, 1995.
- Member of the Program Committee for I F I P - WG 10.3, CONCURRENTPROCESSING, International Conference on Applications in Parallel and Distributed Computing, Caracas, Venezuela, 18-22 April 1994.
- Member of the Program Committee for IPSP'94, The International Parallel Processing Symposium, Cancun, Mexico, April 1994.
- Member of the Program Committee for IPSP'93, The International Parallel Processing Symposium, Newport Beach, CA, April 1993.
- Panel Member at IPSP'92, The International Parallel Processing Symposium, Los Angeles, CA, March 1992.
- Workshops Chair for the IEEE 1992 Symposium on the Frontiers of Massively Parallel Computation, Maryland, October 1992.
- Member of the Program Committee for the IEEE 1990 Symposium on the Frontiers of Massively Parallel Computation, Maryland, October 1990.
- Panel Member at the IEEE 1990 Symposium on the Frontiers of Massively Parallel Computation, Maryland, October 1990.
- Guest Editor, The Visual Computer Special Issue on Foundations of Ray Tracing, March 1990.
- Member of the Program Committee for Computer Graphics International 1987, Karuizawa, Japan, May 1987.
- Active as a reviewer for IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Computing, The Journal of Parallel and Distributed Computing, Discrete Applied Mathematics, The Visual Computer, NSF, and numerous conferences and workshops.
- Session Chair at numerous Conferences and Workshops.

## Research Funding History

- *Client-Server Discrete Event Simulation Over Very Large Communication Networks*, UC-MEXUS, \$40,000.00, with Prof. A. Tchernykh, CICESE. Through 8/31/2003.
- *Synthetic Workload Generation for REE*, Jet Propulsion Laboratory, \$249,473.00, 2000-2001. Through 3/31/2002.
- *Resource Management in Tightly Coupled Multiprocessors*, NASA-Goddard Space Flight Center \$99,990.00, 2000-2001. Through July 2003.

- *A Data Parallel Computing Environment*, NASA-Goddard Space Flight Center \$93,910.00, 1997-1999.
- *Efficient System Support for Data-Parallel MIMD*, NSF International Opportunities for Scientists and Engineers Program, \$30,000.00, 1994-1995, (with University of Warsaw, Poland.)
- *A Methodology for the Performance Evaluation of Supercomputers*, NASA-Goddard Space Flight Center \$36,000.00, 1993-1994, \$44,999.51 for 1994-1995.
- *Interconnection Network Simulation in Massively Parallel Systems*, University of California MICRO, 1992-1993, (with MasPar Computer Corporation, \$26,500.00.)
- *Massively Parallel Scientific Computing: Architectures, Interconnections and Applications*, National Science Foundation, NSF Microelectronics Information Processing Systems Division, (\$1,020,000.00 total project cost, NSF's award \$624,000.00), 1991-1993.
- *Scientific Computing in a Reliable Massively Parallel Processor*, NASA-Goddard Space Flight Center \$75,348.00, 1992-1993.
- *Orthogonal Interconnection Networks for Massively Parallel Processors*, Air Force Office of Scientific Research, \$236,654.00, 1992-1994.
- *A bit-Parallel, word-Parallel, massively Parallel Associative Processor for Scientific Computing*. NSF Microelectronics Information Processing Systems Division, (\$228,236.00), 1991-1993.
- *Heterogeneous Supercomputing Systems with Application to Space Exploration*, Digital Equipment Corporation, \$340,645.00, 75% allowance towards purchase of a VAX 6000 system with Vector processor, 1990.
- *Heterogeneous Supercomputing Systems with Application to Space Exploration*, NASA-Goddard Space Flight Center (\$64,210.00), 1989-1990.
- *Algorithm Based Fault Tolerance in Orthogonal Shared Memory and Related Architectures*, Air Force Office of Scientific Research, \$222,904.00, 1989-1992, (with N. K. Jha, co-PI.)
- Hewlett Packard Co., Equipment Grant: *Instructional Computer Engineering Laboratory*, Princeton University, \$65,000.00, 1989.
- Hewlett Packard Co., Equipment Grant: *Instructional Computer Engineering Laboratory*, Princeton University, \$75,000.00, 1988.
- *Imaging in a Multi-Operand Associative Processor*, National Science Foundation, Computer Engineering, \$118,000.00, 1987-1989.

- *Parallel Processing Architecture for Graphics Display Generation*, Microelectronics Innovation and Computer Research Opportunities, MICRO, University of California and Apple Computer Inc., \$85,000.00, 1985-1986.
- *Fast Translation of Graphical Patterns for Electron-Beam Lithography*, Microelectronics Innovation and Computer Research Opportunities, MICRO, University of California and Varian Corporation, \$89,282.00, 1984-1985, (with John Bruno, co-PI.)
- *Multi-Operand Associative Computer*, National Science Foundation, Research Initiation Grant, ECS84-04627, \$54,000.00, 1984-1986.

## Graduate Students

<b>Name</b>	<b>Thesis Title, Degree, Institution and Date of Defense</b>
David Wangerin	<i>Predictive Adaptive Parallelism</i> , Ph.D., University of California, Irvine, December 2006.
Shean McMahon,	<i>Suitability measures for high performance computers</i> , Ph.D., University of California, Irvine, November 2004.
Fabricio A. B. Da Silva,	<i>Modélisation et Analyse d'une Classe d'algorithmes d'ordonnancement pour Machines Parallèles</i> , Ph.D., University of Paris VI, Paris, France, December 2000.
Vara Ramakrishnan,	<i>The Convergence of Massively Parallel Processors and Multiprocessors</i> , Ph.D., University of California - Irvine, July 2000.
Luis Miguel Campos,	<i>Resource Management Techniques for Multiprogrammed Distributed Systems</i> , Ph.D., University of California - Irvine, February 1999.
Veronica Reis	<i>Designing Virtual Memory Systems for Parallel and Distributed Computing</i> , Ph.D., University of California - Irvine, December 1996.
Umesh Krishnaswamy,	<i>Computer Evaluation Using Performance Vectors</i> , Ph.D., University of California Irvine, December 1995.
Raghu Subramanian,	<i>A Framework for Parallel Job Scheduling</i> , Ph.D., University of California - Irvine, December 1995.

- Chi-Kai Chien, *Bi-directional Interconnection Networks for Massively Parallel Computers*,  
Ph.D., University of California - Irvine, December 1995.
- Brian D. Alleyne, *Methodologies for Analysis and Design of Data Routers in Large SIMD Computers*,  
Ph.D., Princeton University, June 1994.
- David A. Kramer, *Efficient Supercomputer Architectures and Algorithms*,  
Ph.D., Princeton University, January 1993.
- Peter F. Corbett, *Network Structures and Algorithms for Large Multiprocessors*,  
Ph.D., Princeton University, August 1990.
- Elisha Caspary, *Sequential and Parallel Algorithms for Ray Tracing Complex Scenes*,  
Ph.D., University of California - Santa Barbara, June 1988.
- Ruben Quiros, *Stubborn: A Medium Access Protocol for Expert Assistants in Distributed Control Systems*,  
Master of Science, University of California, Santa Barbara, July 1987.
- Sener Ilgen, *A Reconfigurable Fully Parallel Associative Processor*,  
Ph.D., University of California, Santa Barbara, March 1987.
- Yiming Ma, *Numerical Computations on Orthogonal Memory Access Multiprocessing Systems*,  
Master of Science, University of California. Santa Barbara, October 1986.
- Sandeep Sen, *Two Dimensional Parallel Sorting: A New Approach*,  
Master of Science, University of California, Santa Barbara, August 1986.
- P. R. Torleif, *MIDAS, A Microcode Development Tool for a Multi-Operand Associative Computer*,  
Master of Science, University of California, Santa Barbara, October 1984.

## Publications

### Books

- B2** *Interconnection Networks for High Performance Parallel Computers*, IEEE Tutorial, IEEE Computer Society, 1994, (with Abdou Youssef) - in Second Edition.
- B1** *The New Frontiers, a Workshop on Future Directions of Massively Parallel Processing*, Workshop held at the IEEE 1992 Symposium on the Frontiers of Massively Parallel Computation, Mc Lean Virginia, October 1992, IEEE Computer Society Press, Isaac D. Scherson Editor.

### Book Chapters

*Scheduling Computationally Intensive Tasks in Massively Parallel Computers*, CNRS Press, FRANCE (in French), Bertil Folliot Editor

### Journals

- J29 *Federated GRID Clusters using Service Address Routed Optical Networks*’, accepted for publication in "Future Generation Computer Systems" (FGCS): International Journal of Grid Computing: Theory, Methods and Applications”, Elsevier, (with Daniel Valencia, Enrique Cauch, John U. Duseles, and Richert K. Wang).
- J28 *Service Address Routing: A Network-Embedded Resource Management Layer for Cluster Computing*, accepted for publication in “Parallel Computing”, Elsevier, (with Daniel Valencia and Enrique Cauch).
- J27 *Service Discovery for GRID Computing using LKAN-mapped Hierarchical Directories*, accepted for publication in the “Journal of Supercomputing”, Special Issue on GRID computing, (Kluwer Scientific) now Springer, USA, (with , Daniel Valencia and Enrique Cauch).
- J26 *A Universal Performance Factor for Multi-Criteria Evaluation of Multistage Interconnection Networks*, in press, Special Issue of Future Generation Computer Systems Journal on Systems Performance Analysis and Evaluation. (with A. C. ALjundi, J.L. Dekeyser and Tahar Keshadi).
- J25 *Efficient Parallel Job Scheduling Using Gang Service*, International Journal of Foundations of Computer Science Vol. 12, No 3, June 2001, pp. 265-284, (with Fabricio Silva).

- J24 *A Framework for Computer Performance Evaluation Using Benchmark Sets*, IEEE Transactions on Computers, Vol. 49, No. 12, December 2000, pp. 1325-1338, (with Umesh Krishnaswamy).
- J23 *On Evil Twin Networks and the Value of Limited Randomized Routing*, IEEE Transactions on Parallel and Distributed Systems, Vol. 11, No. 9, September 2000, pp. 910-925, (with Brian Alleyne).
- J22 *Rate of Change Load Balancing in Distributed and Parallel Systems*, Parallel Computing, Vol. 26, 2000, pp. 1213-1230, (with Miguel Campos).
- J21 *Efficient Techniques for Nested and Disjoint Barrier Synchronization*, Journal of Parallel and Distributed Computing, Special Issue on Compilation and Architectural Support for Parallel Applications, vol. 58, pp 333-356, (with Vara Ramakrishnan and Raghu Subramanian).
- J20 *Least Common Ancestor Networks*, Journal of VLSI Design, Special Issue on Interconnection Networks, Vol. 2, Number 4, pp. 353-365, April 1995, (with C.-K. Chien.)
- J19 *Massively Parallel Computing and Information Capitalism*, in The New Era of Computing, Daedalus, W. Daniel Hillis and James Bailey (Ed.), MIT Press, December 1992, (with Rob Kling and Jonathan Allen.)
- J18 *Direct Simulation of Yeast 2-Micron Circle Plasmid Amplification*, Journal of Theoretical Biology, Vol. 155, Number 3, 7 April 1992, (with F. D. Russo and J. R. Broach.)
- J17 *Bit-Parallel Arithmetic in a Massively Parallel Associative Processor*, IEEE Transactions on Computers, Vol. 41, Number 10, October 1992, pp. 1201-1210, (with D. A. Kramer and B. D. Alleyne.)
- J16 *Sorting in Mesh Connected Multiprocessors*, IEEE Transactions on Parallel and Distributed Systems, Vol. 3, Number 5, September 1992, pp. 622-632, (with P. F. Corbett.)
- J15 *A Unified Algorithm for Sorting on Multidimensional Mesh-Connected Computers*, Information Processing Letters, 37, February 1991, pp. 225-231, (with Peter F. Corbett.)
- J14 *Orthogonal Graphs for the Construction of a Class of Interconnection Networks*, IEEE Transactions on Parallel and Distributed Systems, Vol. 2, Number 1, January 1991, pp. 3-19.
- J13 *Communications Overhead and the Expected Speed-up of Multidimensional Mesh-Connected Parallel Processors*, The Journal of Parallel and Distributed Computing, Vol. 11, Number 1, January 1991, pp. 86-96, (with P. Corbett.)
- J12 *Efficient Traversal of Well Behaved Hierarchical Trees of Extents for Ray Tracing Complex Scenes*, The Visual Computer, Vol. 6, Number 3, 1990, pp. 167-178, (with M. Charney.)

- J11 *Analysis and Applications of the Orthogonal Access Multiprocessor*, The Journal of Parallel and Distributed Computing, Vol. 7, Number 2, October 1989, pp. 232-255, (with Y. Ma.)
- J10 *Parallel Sorting in Two-Dimensional VLSI Models of Computation*, IEEE Transactions on Computers, Vol. 38, Number 2, February 1989, pp. 238-249, (with S. Sen.)
- J9 *Two Nearly Optimal Sorting Algorithms for Mesh Connected Processor Arrays Using Shear Sort*, The Journal of Parallel and Distributed Computing, Vol. 6, Number 1, February 1989, pp. 151-165, (with S. Sen, Y. Ma.)
- J8 *A Reconfigurable Fully Parallel Associative Processor*, The Journal of Parallel and Distributed Computing, Vol. 6, Number 1, February 1989, pp. 69-89, (with S. Ilgen.)
- J7 *Multi-Operand Arithmetic in a Partitioned Associative Architecture*, The Journal of Parallel and Distributed Computing, Vol. 5, Number 6, December 1988, pp. 655-668, (with S. Ruhman.)
- J6 *Multi-Processing for Ray Tracing: A Hierarchical Self-Balancing Approach*, The Visual Computer, Vol. 4, Number 4, October 1988, pp. 188-196, (with E. Caspary.)
- J5 *Data Structures and the Time Complexity of Ray Tracing*, The Visual Computer, Vol. 3, Number 4, December 1987, pp. 201-213, (with E. Caspary.)
- J4 *Real Time Virtual Window Management for Bit-Mapped Raster Graphics*, The Visual Computer, Vol. 3, Number 3, October 1987, pp. 162-169, (with S. Ilgen.)
- J3 *Tutorial on Microcomputers*, Revista Ingenieria, UNAM, Vol. XLVI, Number 4, pp. 406-420, 1976, (with others.)
- J2 *Method to Obtain the Sum of the First 'n' terms of a Series*, Revista Ingenieria, UNAM, Vol. XLV, Number 1, pp. 107-110, 1975.

### **Journal Letters and Correspondence**

- J1 *Description and Performance of a Class of Orthogonal Multiprocessor Networks*, Computer Architecture News, ACM SIGARCH Newsletter, December 1989, (with P. Corbett.)

### **Refereed Conferences**

- C75 *Service Address Routing: A Network Architecture for Tightly Coupled Distributed Computing Systems*, In Proceedings of the 2005 International Symposium on Parallel

- Architectures, Algorithms and Networks, Las Vegas, NV, USA, December 7-9 2005, pp.296-303. (with Daniel Valencia).
- C74 *Using Predictive Adaptive Parallelism to Address Portability and Irregularity*, In Proceedings of the 2005 International Symposium on Parallel Architectures, Algorithms and Networks, Las Vegas, NV, USA, December 7-9 2005, pp. 370-375.(with D. Wangerin).
- C73 *Scalable Multistage Networks for Multiprocessor System-onChip Design*, In Proceedings of the 2005 International Symposium on Parallel Architectures, Algorithms and Networks, Las Vegas, NV, USA, December 7-9 2005, pp. 352-356.(with S. Meftali and JL Dekeyser).
- C72 *Kerrighed and Data Parallelism: Cluster Computing on Single System Image Operating Systems*, In Proceedings of the 2004 International Conference on Cluster Computing (Cluster 2004) Sponsored by the IEEE Communications Society, September 2004, pp.277-285, (with C. Morin et al.).
- C71 *On Reducing Program Indeterminacy via Partitioning*, In Proceedings of the 2003 International Conference on Software, Telecommunications and Computer Networks, Sponsored by the IEEE Communications Society, October 2003. (with Shean McMahon and R. Some).
- C70 *An Interconnection Networks Comparative Performance Evaluation Methodology: Delta and Over-Sized Delta Networks*, In Proceedings of the 16th IEEE International Conference on Parallel and Distributed Computing Systems, Reno, Nevada, USA, August 2003. (with A. Ch. Aljundi, and J. L. Dekeyser).
- C69 *Automatic Resource Management using an Adaptive Parallel Environment* Proceedings of IEEE IPDPS 2003 Workshop on Massively Parallel Processing, Nice, France, April 2003. (with David Wangerin).
- C68 *A Study of an Evaluation Methodology for Unbuffered Multistage Interconnection Networks* Proceedings of the 17th IEEE International Parallel and Distributed Processing Symposium (IPDPS'03), Nice, France, April 2003. (with A. Ch. Aljundi , J. L. Dekeyser, and M. T. Kechadi).
- C67 *Simulation-Aided Deployment of Distributed Applications in Heterogeneous Systems* Proceedings of the 2002 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, San Diego, California, July 2002, pp.278-287. (with Gaetan Scotto di Apollonia, Christophe Gransart, and Jean-Marc Geib).

- C66 *Comparitive Simulations and Performance Evaluation of MCRB Networks Using Multidimensional Queue Management* Proceedings of the 2002 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, San Diego, California, July 2002, pp.288-296. (with A. Ch. Aljundi , J. L. Dekeyser. and M. T. Kechadi).
- C65 *A Statistical Mechanical Approach to a Framework for Modeling Irregular Programs on Distributed or Cluster Computers*, Proceedings of the 35th Annual Simulation Symposium 2002, San Diego, USA, April 2002. (with Shean McMahon).
- C64 *A Modular Client-Server Discrete Event Simulator for Networked Computers*, Proceedings of the 35th Annual Simulation Symposium 2002, San Diego, USA, April 2002. (with D. Wangerin, C. DeCoro, L.M. Campos, and H. Coyote).
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