Su-Shing Chen

Professor
Department of Computer Information Science & Engineering
Director
Systems Biology Lab and Lab for IT Enterprises
University of Florida-Gainesville
Gainesville, FL 32611
Tel: 352-392-2760 (O)
Fax: 352-392-1220
Email: suchen@cise.ufl.edu

1. Education:

National Taiwan University, Mathematics, B.S., 1961.
University of Tennessee, Mathematics, M.S., 1964.
University of Maryland, Mathematics, Ph.D., 1970.

2. Employment:

Current:

1. Professor, Computer Information Science and Engineering, Genetics Institute and McKnight Brain Institute, University of Florida-Gainesville, 2002-Present.
2. Executive Committee, Genetics Institute, University of Florida-Gainesville, 2003-Present.
3. Emeritus Professor, Computer Engineering & Computer Science, University of Missouri-Columbia, 2002-present.
4. Advisory Professor, Shanghai Jiao Tong University, Shanghai, China, 1999-present.
5. Visiting Professor, Xian Jiao Tong University, Xian, China, 2000-present.
6. Visiting Professor, Northwest Science and Tech University of Agriculture and Forestry, Yangling, China, 1999-present.

Previous:

1. James C. Dowell Research Professor and Professor, 1997-2001; Chair, 1997-2000, Computer Engineering & Computer Science, University of Missouri-Columbia.
2. Adjunct Professor, Health Management & Informatics, University of Missouri-Columbia, 1998-2001
3. Program Director, Information Tech & Organizations Program, NSF, May 1994-Aug. 1995.
4. Program Director, NSF/ARPA/NASA Digital Libraries Initiative, May 1994-Aug. 1995.
5. Program Director, Knowledge Models & Cognitive Systems Program, NSF, 1991-94.
6. Professor, Computer Science, UNC-Charlotte, 1986- 1996.
7. Chairman, Computer Science, UNC-Charlotte, 1986-1989.
8. Professor and Chairman, Computer and Information Science, IUPUI, 1985-1986.
9. Program Director, Intelligent Systems, NSF, 1984-1985.
10. Acting Program Director, Theoretical Computer Science, NSF, 1984.
11. Program Director, Geometric Analysis, NSF, 1983-1984.
12. Professor, Mathematics, University of Florida, 1982-1985.
13. Associate Professor, Mathematics, University of Florida, 1975-1982.
14. Assistant Professor, Mathematics, University of Florida, 1970-1975.

3. Other Academic Experience:

1. Visiting Professor, Computer Science, Hong Kong Science & Technology University, December 1995, July-December 1996.
2. Visiting Professor, Information Tech and Multimedia, University of Jyvakyla, Finland, May 1996, March and May 1997, May 1998.
3. Institutional Adjunct Professor, Electrical & Computer Engineering, NCSU, 1988-1996.
4. Visiting Senior Research Scientist, Institute for Systems Research, UMD, 1995-1997.
5. Visiting Professor, Biomedical Engineering, UNC-Chapel Hill, 1990-1991.
6. Adjunct Professor, Computer Science, University of Maryland, 1994-1995.
7. Professorial Lecturer, Electrical Engineering, George Washington University, 1983-1985.
8. Visiting Professor, Mathematics, University of Bonn, West Germany, 1980.
9. Visiting Professor, Mathematics, IMPA, Rio de Janeiro, Brazil, Spring 1979.
10. Visiting Associate Professor, Mathematics, University of Maryland, Fall 1979.
11. Visiting Associate Professor, Mathematics, Georgia Tech, 1978-1979.
12. Visiting Professor, Operations Research, National University of Mexico, Summer 1978-1979.

4. Industrial Experience:

1. Visiting Scientist, IBM, Boca Raton SPD, Summer 1982.
2. Visiting Scientist, IBM, Thomas Watson Research Center, Summer 1983.
3. Visiting Scientist, IBM, Palo Alto Scientific Center, Summer 1986.
4. Visiting Scientist, Boeing, High Tech Center, Summer 1989.
5. Consultant, Eaton Corp, Semiconductor Research Corp, Nielsen Media Research, 1984-1991.
6. President, 3-D Informatics (DARPA SBIR), 1990-1991.

5. Professional Society Membership:

- IEEE (Senior Member), AAAI (Life Member), SPIE (Fellow).

6. Editorial Service:

1. Editorial Board, International Journal of Intelligent Systems.
2. Editorial Board, Pattern Recognition.
3. Editorial Board, International Journal of Pattern Recognition and Artificial Intelligence.
4. Editorial Board, Journal of Organizational Computing & Electronic Commerce.
5. Editor, Proc. SPIE Conferences on Stochastic and Neural Methods for Image and Signal Processing, 1990-1994.
6. Editor, Proc. SPIE Conferences on Adaptive Computing, 1996 (with H. J. Caulfield).
7. Editorial Board, Information Society, 1995-1996.
8. Editorial Board, International Journal of Mathematical Imaging, 1993-1996.

7. Awards and Honors:

1. NSF Graduate Fellow, University of Maryland, 1966.
2. NSF Outstanding Performance Rating Award, 1985.
3. George Mason Graduate School Visiting Fellow, 1989.
4. NSF, Directorate of Engineering, Cooperative Team Effort Award (Intelligent Control), 1993.
5. NSF, Team Effort Award (Digital Libraries), 1995.
6. NSF, Division of IRIS, Recognition for Outstanding Contributions at NSF (1991-95) and Leadership in the Cross-Agency Initiative on Digital Libraries, 1995.
7. Distinguished Accomplishment Award, Midwest Chinese-American Association, 2000.

8. Recent Grant Experience:

1. Co-PI, NSF ITR, ITR: Flexible and Dynamic Workflow Design: Theory and Practice (University of Pittsburgh subcontract), 2004-2009.
2. PI, NSF National SMETE Digital Library, Enhancing interoperability for NSDL collections and services (Virgina Tech and NCSA subcontracts), 2000-2005.
3. PI, NSF Education Infrastructure Grant: Agent-based learning systems, 1999-2002.
4. Co-PI, NSF Agent-based computing in Computer Science and Engineering Curriculum, 1999-2001.
5. PI, NSF National Biological Digital Library (Subcontractors: National Computational Sciences Alliance (NCSA), University of Illinois, and Missouri Botanical Garden), 2001-2005.
6. Co-PI, NSF Maize Genome Project, 1998-2003.
7. PI, NSF Workshop on Data Archiving & Information Preservation, 1998.
8. PI, National Leadership Grant, Institute Museum & Library Service, Digital Web Conferences, 2000 and 2001.
9. PI, Subcontract from SUNY and UCLA, National Historical Publications & Records Commission, 2000-2005.
10. PI, Sun Microsystems AEG grant, Digital Libraries, 1999.

9. Professional Activity:

1. Co-Chair, Florida Bioinformatics Workshop 2005, Gainesville, Florida.
2. Program Committee, International Conference on Asian Digital Libraries, 2004, Shanghai, China.
3. Publicity Co-Chair, IEEE/ACM Joint Conference on Digital Libraries, 2004, Tucson, Arizona.
4. Co-Chair, Program Committee, AAAI Workshop on Spatial Reasoning and Multisensor Fusion, 1987
5. Organizing Committee, Program Chair and Program Committee, International Symposium on Methodologies for Intelligent Systems, 1986, 1987, and 1988
6. Program Committee and Program Co-Chair, SPIE Sensor Fusion, 1988, 1989, 1993
7. Conference Chair, SPIE Stochastic and Neural Methods in Signal and Image Processing, 1990, 1991, 1992, 1993; SPIE Adaptive Computing Critical Reviews, 1994, and Conference 1996
8. Reviewers and program committees of journals and conference proceedings; reviewers for federal agencies

10. Books Authored and Edited:

1. Image Understanding in Unstructured Environment, World Scientific, 1988

2. Multisensor Fusion and Spatial Reasoning, Morgan Kaufmann, 1987 (with A. C. Kak)
3. Advances in Spatial Reasoning, Vol. 1 & 2, ABLEX, 1990
4. Intelligent Control, Diagnosis and Modeling of Manufacturing Processes, World Scientific, 1992 (with B. Chu)
5. Adaptive Computing: Mathematics, Electronics, and Optics, SPIE, 1994 (with H. J. Caulfield)
6. Digital Libraries: The Life Cycle of Information, Better Earth Publisher, 1998, http://www.amazon.com.
7. Adaptive Computing: Mathematical and Physical Methods for Complex Environments, SPIE, 1996 (with H. J. Caulfield

11. Papers:

Bioinformatics

1. Chen JF, Lu F, Chen S, Tao SH.Significant positive correlation between the recombination rate and GC content in the human pseudoautosomal region, Genome. 2006 May;49(5):413-419.
2. Ottens AK, Kobeissy FH, Golden EC, Zhang Z, Haskins WE, Chen S, Hayes RL, Wang KK, Denslow ND.Neuroproteomics in neurotrauma., Mass Spectrom Rev. 2006 May-Jun;25(3):380-408.
3. Pang H, Tang J, Chen S, Tao S.Statistical distributions of optimal global alignment scores of random protein sequences.BMC Bioinformatics. 2005 Oct 15;6:257.
4. Coe E, Cone K, McMullen M, Chen S, Davis G, Gardiner J, Liscum E, Polacco M, Paterson A, Sanchez-Villeda H, Soderlund C, Wing R. Access to the maize genome: an integrated physical and genetic map.Plant Physiol. 2002 Jan;128(1):9-12.
5. J.Hu,M. Zhou. Y.Song,S.Chen. Spinal cord Injury gene network is scale-free, in preparation.
6. S.Chen, W.E.Haskins, A.D.Ottens, R.L.Hayes, N. Denslow, and K..Wang,. Bioinformatics for Traumatic Brain Injury: Proteomic Data Mining, in 'Data Mining in Biomedicine', Springer-Varlag, to appear.
7. S.Chen,H.Kim A Knowledge Management System for Organizing MEDLINE Database, in 'Data Mining in Biomedicine', Springer-Varlag, to appear.
8. W. Wu, Y. Song, S. Jin and S. Chen, Annual Conference American Microbiology Society, A Pseudomonas aeruginosa Gene Regulation Database with a Regulatory Network Map, May , 2006
9. J. Zhang, Y. Song and S. Chen, Granular Computing and compositional complexity in biomolecular sequences, IEEE GRC 2006.
10. Y. Song and S. Chen, Itemset graph mining for metabolic pathways, IEEE GRC 2006, Atlanta Ga, May 2006.
11. H Kim, T Yoon, Y Zhang, A Dikshit,S Chen, Predictability of Rules in HIV-1 Protease Cleavage Site Analysis IWBRA06 conference. Lecture Notes in Computer Science, Springer-Verlag2006; Oxford Bioinformatics, submitted.

12. W.Wu,Y.Song,S.Jin and S.Chen, An Interactive Map of Regulatory Networks of Pseudomonas aeruginosa Genome. Lecture Notes in Bioinformatics; First RECOMB SarelliteWorkshop on Systems Biology, DEC. 2-4 2005, San Diego CA S.Chen amd
13. S> Chen and H.Kim, Automated linking PUBMED documents with GO terms using SVM. Journal of Data Science, v.5, #2, April of 2007.
14. S.Chen amd H.Kim, Automated linking PUBMED documents with GO terms using Bayesian methods. Springer Journal of Data Mining and Knowledge Discovery, submitted..
15. Z. Fang, M. Polacco, S.Chen, S. Schroeder, D. Hancock, H. Sanchez and E. Coe, cMap: the comparative genetic map viewer, Bioinformatics, Vol. 19 no. 3, 2003, pages 416–417.
16. Z. Fang, D. Hancock, H. Sanchez, S. Schroeder, M. Polacco, S. Chen, E. Coe, An tool for graphic comparative genetic mapping, International Conference on Status of Plant & Animal Genome Research, January 13-18, 2001, San Diego, CA.
17. S. Chen, Knowledge representation for systems biology, International Conference on Systems Biology, Tokyo, November 2000.
18. S. Chen, Knowledge discovery of gene functions and metabolic pathways, IEEE BioInformatic and Biomedical Engineering Conference, Washington DC, November 2000.
19. E. Coe, M. McMullen, M. Polacco, K. Cone, M. Liscum, S. Chen, R. Wing, R. Dean, and A. Paterson, Toward a genetic, physical, and database resource for maize, International Conference on Status of Plant & Animal Genome Research, January 17-21, 1999, San Diego, CA.
20. Z. Fang, H. Sanchez, B. Antonio, S. Schroeder, A. Chang, A. Chen, D. Hancock, M. Polacco, K. Sakata, S. Chen, T. Sasaki, E. Coe, An object-oriented query system to multiple crop databases, International Conference on Status of Plant & Animal Genome Research, January 9-12, 2000, San Diego, CA.
21. B. Antonio, M. Polacco, H. Sanchez, Z. Fang, D. Hancock, S. Chen, I. Ohta, Y. Mukai, K. Sakata, E. Coe, and T. Sasaki, An interoperable query system for INE and MaizeDB: Expanding genomic resources for rice and maize, The Sixth International Congress of Plant Molecular Biology, Quebec Canada, June 18-24, 2000.
22. M. Polacco, D. Hancock, H. Sanchez, Z. Fang, H. Kross, L. Vincent, S. Stroeder, S. Chen, and E. Coe, MAIZEDB - Gateway to all public Maize genome data, The Sixth International Congress of Plant Molecular Biology, Quebec Canada, June 18-24, 2000.
23. S. Chen, Hamiltonian model of quantum retina processing, in Adaptive Computing: Mathematical and Physical Methods for Complex Environments, SPIE, 1996, pp. 115-125.
24. S. Chen, Probabilistic logic of quantum computers, in Adaptive Computing: Mathematical and Physical Methods for Complex Environments, SPIE, 1996, pp. 126-134.
25. S. Chen, A localized protein-folding problem, International Journal of Intelligent Systems, Vol. 16, 2001, pp. 449-458.
26. S. Chen, Characterizing and learning spatial structures in protein conformation, Proc. 2nd International Conference on Bioinformatics, Supercomputing, and Complex Genome Analysis, World Scientific, 1993.

Information Technology and Digital Libraries:

1. H. Shi, Y. Shang, and S. Chen, A multi-agent system for computer science education, Fifth Annual Conference on Innovation and Technology in Computer Science Education, Helsinki, Finland, July 11-13, 2000, pp. 1-4.
2. Y. Shang, H. Shi, and S. Chen, Agent technology in computer science and engineering curriculum, Fifth Annual Conference on Innovation and Technology in Computer Science Education, Helsinki, Finland, July 11-13, 2000, pp. 120-123.
3. S. Chen and C. Choo, Extending OAI metadata harvesting to federated search, ACM/IEEE JCDL Conference, Portland OR, 2002.
4. V. Parmar, H. Shi, S. Chen, XML access control for semantically related XML documents, Proc. 36th Hawaii International Conference on System Science (HICSS-36), Big Island Hawaii, January, 2003.
5. C. S. Cummings, H. Shi, Y. Shang and S. Chen, A flexible authentication and authorization scheme for a learner information management web services, First International Conference on Web Services, June 23-26, 2003, Las Vegas, NV.
6. Rodriguez, S. Chen, H. Shi, Y. Shang, Open Learning Objects: the case for inner metadata, International WWW Conference 2002, Honolulu, Hawaii, 7-11 May 2002.
7. H. Shi, S. Revithis, S. Chen: An agent enabling personalized learning in e-learning environments. AAMAS 2002: 847-848
8. Y. Shang, H. Shi, S. Chen: An intelligent distributed environment for active learning. International WWW 2001: 308-315.
9. Y. Shang, H. Shi, S. Chen: An intelligent distributed environment for active learning. ACM Journal of Educational Resources in Computing 1(2): 4 (2001)
10. H. Shi, O. Rodriguez, Y. Shang, and S. Chen, Integrating Adaptive and Intelligent Techniques into a Web-based Environment for Active Learning, in C. T. Leondes, editor, Intelligent Systems: Technology and Applications, Volume 4, Chapter 10, pages 229-260, CRC Press, Boca Raton, FL, June 2002.
11. S. Chen, The paradox of digital preservation, Computer, March, 2001, pp. 2-6.
12. J. Futrelle, S. Chen, and K. Chang, NBDL: National Biological Digital Library, ACM/IEEE Joint Conference on Digital Libraries, Roanoke VA, June 2001.
13. S. Chen, Preserving Digital Records and the Life Cycle of Information, Advances in Computers, Elsevier Science, 2003.
14. S. Chen, C. Choo, and R. Y. Chow, Internet security: A novel role/object-based access control for information domains, Journal of Organizational Computing and Electronic Commerce, 2005.
15. H. Kim, C. Choo, S. Chen, An Integrated DL Server with OAI and Self-Organizing Capabilities, ECDL 2003, Lecture Notes, Springer-Verlag, 2003.
16. S. Shi, O. Rodriguez, S. Chen and Y. Shang, Open learning objects as an intelligent way of organizing educational material, International Journal on E-Learning, Vol. 3 No. 2, 2004, pp. 51-63.
17. S. Chen, O. Rodriguez, C. Choo, Y. Shang, H. Shi: Personalizing Digital Libraries for Learners. DEXA 2001: 112-121, Lecture Notes, Springer Verlag, 2001.

18. J. L. Zhao, D. Rotem, and S. Chen, A multi-user access approach for video digital libraries, Journal of Parallel and Distributed Computing, 56, 1999, pp. 208-234.
19. S. Chen, A digital library of undergraduate SMET materials: The need and technical issues, in Developing a Digital National Library for Undergraduate SMET Education, National Research Council, Washington DC, 1998.
20. S. Chen, P. Tyrvainen, and A. Salminen, Integration of digital documents in virtual manufacturing organizations, Proc. HICSS-31, 1998, Hawaii.
21. S. Chen, Managing multimedia digital libraries for the 21st century, Proceedings National Library Conference, Malaysia, 1996.
22. S. Chen, Y. T. Chien, and S. Griffin, The NSF perspective on the NSF/ARPA/NASA Initiative on Digital Libraries, IEEE Computer, May, 1996.
23. S. Chen, Knowledge dissemination = digital libraries + collaboration technology, Building and Sharing of Very Large Scale Knowledge Bases, IOS Press, 1995.
24. S. Chen, The NSF/ARPA/NASA Research on Digital Libraries Initiative, Proc. Digital Library Conference, March 1995, Singapore.
25. S. Chen, Technologies for Digital Libraries, Proc. Digital Library Conference, March 1995, Singapore.
26. S. Chen, Content-based indexing of spatial objects in digital libraries, Journal of Visual Communications and Image Representations, Special Issue on Digital Libraries, S. Chen and E. Fox (Ed.), March, 1996.
27. S. Chen, Digital libraries, Proc. of SPIE's Critical Reviews on Defining the Global Information Infrastructure, Nov. 1-3, 1994, Boston MA.
28. S. Adali, K. Candan, S. Chen, K. Erol, and V. S. Subrahmanian, Advanced video information system: Data structures and query processing, ACM Multimedia Systems Journal, 1996.
29. S. Chen, Some technical issues of intelligent transportation systems, book chapter in Converging Infrastructures: Intelligent Transportation Systems and the National Information Infrastructure, L. Branscomb and J. Keller (Ed.), MIT Press, 1996.
30. S. Chen, Multisensor fusion and navigation of mobile robots, in Multisensor Integration and Fusion for Intelligent Machines and Systems, R. C. Luo and M. G. Kay (Ed.), Ablex Publishing, 1995, pp. 467-494.
31. S. Chen, The role of information infrastructure and intelligent agents in manufacturing enterprises, Journal of Organizational Computing, Vol. 5, Ablex Publishing, 1995, pp. 53-67.
32. H. Shi, Y. Shang, and S. Chen, "TIGERMU: a Tightly Integrated General Environment for Resource Management and Utilization," (Invited paper), in Proceedings of the First International Conference on Information (Information'2000), Fukuoka, Japan, October 2000.
33. S. Chen, A mathematical formulation of quantum visual dynamics, Toward a Science of Consciousness, August 2001, Skovde, Sweden.

Neural Networks

1. Better learning for bidirectional associative memory, Neural Networks, 6, pp. 1131-1146, 1993 (with X. Zhuang and Y. Huang).
2. An experimental comparison between maximum entropy and minimum relative-entropy spectral analysis, IEEE Trans. Signal Processing, 1993 (with X. Zhuang and L. Chen).
3. On spatial mental models in cognitive systems, Fundamenta Informaticae, 18, 1993.
4. A generalized neocognitron model for facial recognition, Proc. SPIE Conference on Stochastic Methods in Signal Processing, Image Processing, and Computer Vision, July 1991 (with Y. Hong).
5. Character recognition in a sparse distributed memory, Trans. IEEE SMC, 1991, pp. 674-677 (with Y. Hong).
6. Knowledge acquisition on neural networks, Proc. International Conference on Information Processing and Management of Uncertainty in Knowledge-based Systems, Urbino, Italy, 1988, Springer-Verlag.
7. Automated reasoning on neural networks: A probabilistic approach, Proc. IEEE First Annual International Conference on Neural Networks, San Diego CA, 1987.
8. On computational vision: A neural processing approach, International Journal of Neural Systems, Vol. 1, 1989, pp. 95-102.
9. Evidential reasoning on artificial neural network models, Revue Internationale de Systemique, Vol. 3, 1989, Gauthier-Villars, pp. 421-436.
10. A logical structure of cognitive maps, Proc. IEEE International Conference on Neural Networks, San Diego CA, 1988 (with W. Zhang).
11. POOL2: A generic system for cognitive map development and decision analysis, Trans. IEEE SMC, Vol. 19, 1989, pp. 31-39 (with W. Zhang and J. Bezdek).
12. A cognitive-map-based approach to the coordination of distributed cooperative agents, Trans. IEEE SMC, Vol. 22, 1992, pp. 103-114 (with W. Zhang and R. King).
13. Neural networks and computer vision, Proc. IEEE First Annual International Conference on Neural Networks, San Diego CA, 1987.
14. A neural network approach to database systems, Proc. International Conference on Information Processing and Management of Uncertainty in Knowledge-based Systems, Paris France, 1990.
15. Cellular processing and statistical mechanics, Letters in Math Physics, Reidel, 1985.
16. A hierarchical sigma-pi neural architecture for learning search algorithms, Proc. International Symposium of Methodologies for Intelligent Systems, Torino Italy, 1988, Elsevier, North-Holland (with G. K. Mei, W. Liu).
17. A parallel distributed processing model for office information systems, IEEE Office Knowledge Engineering Letters, 1989, pp. 26-36.

Computer Vision and Image Processing:

1. A new vision system and the Fourier descriptor method by group representation theory, Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition, San Francisco CA, 1985.
2. Image processing by incomplete knowledge, Proc. IEEE Workshop on Languages for Automation: Cognitive Aspects in Information Processing, Palma Spain, 1985.
3. Structure-from-motion without the rigidity assumption, Proc. IEEE Computer Society Workshop on Computer Vision: Representation and Control, Bellaire MI, 1985.
4. A data flow computer architecture for Markov image models, Proc. IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management, Miami Beach FL, 1985.
5. An intelligent computer vision system, International Journal of Intelligent Systems, Vol. 1, 1986, pp. 15-28.
6. Shape and motion of nonrigid bodies, Computer Vision, Graphics and Image Processing, Vol. 36, 1986, pp. 179-207 (with M. Penna).
7. Shape and correspondence, Proc. SPIE-Advances in Intelligent Robotics Systems Symposium, Cambridge MA, 1986 (with M. Penna).
8. Motion analysis of deformable objects, Advances in Computer Vision and Image Processing, Vol. 3, 1987, T. Huang (Ed.), pp. 179-220 (with M. Penna).
9. Spherical data structure and visual feedback for robotic control, Proc. IEEE First Annual Workshop on Intelligent Control, Troy NY, 1985.
10. Shape-from-shading using multiple light sources, International Journal of Intelligent Systems, Vol. 1, 1986, pp. 263-292 (with M. Penna).
11. Recognizing deformation of nonrigid objects, Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition, Miami Beach FL, 1986 (with M. Penna).
12. Multisensor fusion and navigation of mobile robots, International Journal of Intelligent Systems, Vol. 2, 1987, pp. 227-251.
13. Image reconstruction from zero crossings, Proc. International Joint Conference on Artificial Intelligence, Milan Italy, 1987.
14. Real-time visual processing and robotic navigation, Proc. International Conference on Intelligent Control, Philadelphia PA, 1987.
15. A two-dimensional solution to the problem of zero crossings and spatiotemporal interpolation in computer and human vision, Proc. IEEE International Conference on Computer Vision, London England, 1987.
16. Image processing of nonrigid bodies, Proc. SPIE Annual International Technical Symposium, San Diego CA, 1987.
17. A geometric theory of spatial reasoning and multisensor fusion, Proc. AAAI Workshop on Multisensor Fusion and Spatial Reasoning, St. Charles IL, 1987, Morgan Kaufmann.
18. Evidential reasoning in image understanding, Proc. AAAI Workshop on Uncertainty in AI, Seattle WA, 1987 (with M. Zhang).
19. Spherical perspective approach to optical flow, Proc. SPIE Advances in Intelligent Robotics Systems, Cambridge MA, 1987 (with M. Penna).

20. Spatial information processing: Understanding remote sensing images, book chapter in "Image Understanding in Unstructured Environment", World Scientific, pp. 179-208, 1988, (with M. Zhang).
21. Spherical analysis in computer vision and image understanding, book chapter in "Image Understanding in Unstructured Environment", World Scientific, pp. 179-208, 1988, (with M. Penna).
22. Spatial reasoning for mobile robots, in Robotics and Manufacturing: Recent Trends in Research, Education and Applications, ASME Press, pp. 475-482, 1988.
23. Fusion of shading and structured lighting images for obtaining 3-D scene information, Proc. SPIE Conference on Sensor Fusion, Cambridge MA, 1988 (with M. Penna).
24. Fusion of multisensor data into 3-D spatial information, Proc. SPIE Conference on Sensor Fusion, Cambridge MA, 1988.
25. Dynamic scene analysis and the 8-point algorithm, Proc. International Conference on Pattern Recognition, Rome Italy, 1988.
26. Adaptive control of multisensor systems, Proc. SPIE Technical Symposium, Orlando FL, 1988.
27. A geometric approach to multisensor fusion, Proc. SPIE Technical Symposium, Orlando FL, 1988.
28. Three-dimensional object recognition using range data, Proc. SPIE Conference on Intelligent Robots and Computer Vision, Cambridge MA, 1988 (with M. Penna).
29. Stochastic image algebra for multisensor fusion and spatial reasoning: A neural approach, Proc. SPIE Technical Symposium, Orlando FL, 1989.
30. A bit level systolic array for real-time two-dimensional moment generation, Systolic Array Processors, 1989 (with W. E. Batchelor, W. Liu, and R. Cavin).
31. A spherical model for navigation and spatial reasoning, NATO Advanced Research Workshop, Springer-Verlag ARW Book Series, pp. 59-72, 1989.
32. Learning in a spatial environment, Proc. SPIE Conference on Sensor Fusion, Philadelphia PA, 1989 (with M. Hadzikadic).
33. Exploiting bit level concurrency in real-time geometric feature extractions, Trans. IEEE SMC, 1993 (with W. Liu and R. Cavin).
34. P3A: A partitionable parallel/pipeline architecture for real-time image processing, Proc. International Conference on Pattern Recognition: Computer Architectures for Vision and Pattern Recognition, Atlantic City NJ, 1990 (with C. T. Gray, W. Liu, T. Hughes, and R. Cavin).
35. Image representation of moving nonrigid objects, Journal of Visual Communication and Image Representation, 1991 (with A. Zhao).
36. Sensor fusion at different data abstractions, Proc. SPIE Conference on Sensor Fusion, Cambridge MA, 1990.

Intelligent Information Systems:

1. Evidential logic and Dempster-Shafer theory, Proc. International Symposium on Methodologies for Intelligent Systems, Knoxville, TN, 1986.
2. Some extensions of probabilistic logic, Proc. AAAI Workshop on Uncertainty in AI, 1986; and also in "Uncertainty in Artificial Intelligence", Elsevier, North-Holland, 1987.
3. A spatial reasoning and decision support system, Proc. International Symposium on Methodologies for Intelligent Systems, Charlotte NC, 1987, Elsevier, North-Holland (with M. Zhang and W. Zhang).
4. Spatial reasoning, in "Encyclopedia of Computer Science and Technology", Marcel Dekker, 1990, pp. 353-367.
5. On NPN logic, Proc. IEEE International Conference on Multi-valued Logic, Palma Spain, 1988 (with W. Zhang, M. Zhang, K. Chen, and J. Bezdek).
6. Graphic representation of linear recursive rules, International Conference on Computing and Information, Toronto Canada, 1989 (with J. Han).
7. Variable-predicate graphs for linear recursive rules, International Journal of Intelligent Systems, 1991 (with J. Han).
8. Digital libraries, Proc. of SPIE's Critical Reviews on Defining the Global Information Infrastructure, Nov. 1-3, 1994, Boston MA.
9. Multimedia Computing for Digital Libraries (with S. Shen). IEEE Newsletter of the Technical Committee on Multimedia Computing, pp. 5-8, Vol. 2, No. 2, June, 1994.

Advanced Manufacturing Systems:

1. Intelligent control of semiconductor manufacturing processes, in "Intelligent Control, Diagnosis, and Modeling of Manufacturing Processes", World Scientific, 1992.
2. Intelligent control of semiconductor manufacturing processes, Proc. IEEE Fuzzy Systems Conference, 1992, pp. 101-108.
3. AEMPES: An expert system for in-situ diagnostics and process monitoring, Proc. International Semiconductor Manufacturing Science Symposium, Burlingame CA, 1990.
4. QUASI: An qualitative analysis of surface and interface system for microelectronic material processing, Proc. SPIE Conference on AI and Applications, Orlando FL, 1990.
5. An expert system for electrical characterization of insulator-semiconductor systems, Proc. Advanced Semiconductor Manufacturing Conference, 1990 (with E. Nicollian and R. Tsu).
6. AEMPES: An expert system for in-situ diagnostics and process monitoring, Proc. SPIE Symposium on Microelectronic Integrated Processing: Growth, Monitoring, and Control, 1989, Santa Clara CA.
7. Multichamber and in-situ processing system design and control, Proc. SPIE Symposium on Microelectronic Integrated Processing: Growth, Monitoring, and Control, 1989, Santa Clara CA.
8. Adaptive (neural network) control in computer-integrated manufacturing, Proc. IEEE International Conference on Intelligent Control, Arlington VA, 1988.

9. Adaptive (neural network) control in computer-integrated manufacturing, Proc. IEEE/SPIE Conference on Applications of Artificial Intelligence, Orlando FL, 1988 (with M. Zhang).
10. Simulation in factory automation, Proc. SEMICON/Kansai-Kyoto Technology Seminar, Kyoto Japan, 1991.
11. Group technology in multichamber and in-situ processing, Proc. SPIE Conference on AI and Applications, Orlando FL, 1990.

Dynamical Systems:

1. Asymptotic stability of random systems, Proc. 21st Allerton Conference on Communication, Control, and Computing, 1983.
2. Crystallographic groups and Navier-Stokes equations, Journal of Statistical Physics, 29, 1982.
3. Patterson measure and Anosov flow, Proc. International Conference on Dynamical Systems, 1981, Academic Press.
4. The convergence of zeta functions for certain geodesic flow depends on their pressure, Math. Zeitschrift, 176, 1981, pp. 379-382 (with A. Manning).
5. Entropy of geodesic flow and exponent of convergence of some Dirichlet series, Math. Annalen, 255, 1981, pp. 97-103.
6. Limit sets of automorphism groups of a tree, Proc. Amer. Math. Soc., 83, 1981, pp. 437-441.
7. An extension of Kakutani-Beboutov system, Journal of Differential Equations, 18, 1975, pp. 275-276.
8. Linearization of homeomorphism groups, Proc. Amer. Math. Soc., 52, 1975, pp. 447-450.
9. Visual Neural Dynamics. Proceedings of SPIE Conference on Neural and Stochastic Methods in Image and Signal Processing, pp. 2-9, Vol. 2304, July, 1994.
10. Complex and chaotic systems, SPIE Critical Reviews of optical Science and Technology, Volume CR55, Adaptive Computing: Mathematics, Electronics, and Optics, S. Chen & H. J. Caulfield Eds., pp. 34-46, April, 1994.

Transformation and Lie Group Theory:

1. A note on Matsushima formula of discrete uniform subgroups of semisimple Lie groups, Kyungpook Math. Journal, 11, 1971, pp. 41-43.
2. Varieties of topological groups generated by Lie groups, Proc. Edinburgh Math Soc., 18, 1972, pp. 49-53 (with S. Morris).
3. On subgroups of the noncompact real exceptional Lie group F4, Math. Annalen, 204, 1973, pp. 271-284.
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