RESUME

FIKRET ERCAL

PERSONAL DATA

Business Address:
Computer Science Department
Missouri University of Science & Technology, Rolla, MO, 65401

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URL: http://web.mst.edu/~ercal/

EDUCATION

June 1988	Ph.D., Computer and Information Science Dept., The Ohio State Univ., Cols, OH *Dissertation:* Heuristic Approaches to Task Allocation For Parallel Computing. (Advisor: P. Sadayappan)
Mar. 1985	M.S. in Computer and Information Science, The Ohio State University.
July 1981	M.S. in EE, Istanbul Technical University, Turkey
June 1979	B.S. in EE, Istanbul Technical University, Turkey (graduated with first-class honors)

ACADEMIC EXPERIENCE

Aug. 2005 - Jan. 2008: Interim Chairman, Computer Science Department, Missouri University of Science & Technology.

Jan 2004 - Aug. 2005: Associate Chairman, Computer Science Department, Missouri University of Science & Technology.

June 1999 - present: Professor, Computer Science Department, Missouri University of Science & Technology.

July 1995 - June 1999: Associate Professor, Computer Science Department, Missouri University of Science & Technology.

Dec. 1996 - 2002: Founder and Director, Computer Vision Laboratory, MST

August 1990 - 2001: Research Investigator, Intelligent Systems Center, MST

August 1990 - July 1995: Assistant Professor, MST

November 1989 - July 1990: Associate Professor, Dept. of Computer Engineering & Information Sciences, Bilkent University, Ankara.

July 1988 - October 1989: Assistant Professor, Dept. of Computer Engineering & Information Sciences, Bilkent University, Ankara.

Jan. 1983 - June 1988: Graduate Research Associate, Teaching and Administrative Assistant, Departments of Computer and Information Science and Electrical Eng., The Ohio State Univ.

Sept. 1979 - July 1982: Graduate Research Assistant, and Teaching Assistant, Department of Electrical Engineering, Istanbul Technical University.

RESEARCH INTERESTS

Parallel and distributed processing, bioinformatics, image processing, computer vision and neural networks.

AWARDS / HONORS / SCHOLARSHIPS

Meritorious Service Award; IEEE Computer Society, February 2002.

MST Faculty Excellence Awards; 1995-96, 1997-98, and 1998-99 ($2500 each, 1995-96 award is sponsored by McDonnell Douglas Co.)

IEEE Golden Core Member: awarded in March 2002

Distinguished Service Award; Istanbul Technical Univ. Alumni Association, 1997 and 2000.

Best Paper Award; November 1994, *International Conf. on Artificial Neural Networks in Engineering* (selected among 160 papers).

1982 - 1988: Received scholarship from Turkish Scientific and Technical Research Council (TUBITAK) for Ph.D. studies in the U.S. (only two students from Turkey in EE field were chosen for this award)

July 1981: Selected as a Fulbright Scholar for Ph.D. studies in the U.S. (Since two scholarships could not be used at the same time, did not use Fulbright scholarship)

June 1979: Recipient of the *Ord. Prof. Bedri Karafakioglu Award* for obtaining the **first rank** in the B.S. program in Electrical Engineering, Istanbul Technical University.

August 1974: Recipient of Work Bank's money award for obtaining the 24^{th} place among the 250,000 students taking the *University Entrance Exams* nationwide. Qualified to be *the top* scorer among all the students attending Istanbul Technical University in 1974.

FUNDED RESEARCH PROJECTS AND GRANTS

Total Research Grants: $6 Million ($1 Million F. Ercal's part)

- NVIDIA Professor Partnership Program, *NVIDIA Co.*, Donation of 8 NVIDIA GPU Boards worth $12,500, 12/2008, (PI, Co-investigators D. Tauritz and A. Hurson)
- NSF REU, "Training and Research Experience for Undergraduates in the Area of Sensor Networking and Applications," $300,000, 2008-2011, (PI:Sanjay Madria, co-PIs: Fikret Ercal, and J. Sarangapani).
- Department of Education (GAANN), "Secure and Adaptable Energy-efficient Sensor Networks for Infrastructure Monitoring," $384K, 2007-2011, (PI: Sanjay Madria, Co-PIs F. Ercal, M. Cheng, J. Sarangapani, and G. Chen)
- NSF, "Wireless Test-bed for Mobile Computing Research", $100,000, 9/2003-8/2005, (Co-PI with S. Madria, B.McMillin, J. Sarangapani, and S.R. Subramanya)
- NASA, "Turbofan Noise Propogation and Radiation at High Frequencies," $136,052, 9/1/01-8/31/03, (Co-investigator with W. Eversman)
- UM-Research Board, "Video Data Transfer in 2-D Meshes Using Wormhole Routing," $28,952, 2/2001-5/2002 (Co-investigator with S.R. Subramanya)
- Department of Education (GAANN), "Fellowship Program in Multidisciplinary Research and Training in the Area of Embedded Real-Time Computer Systems," $669,750 (including MST match of $213,000), 8/15/2000-8/14/2003, (Co-investigator with Ann Miller, V. S. Rao, H. Pottinger, R. Davis)
- NSF, IGERT, "Variable Speed Electromechanical Drive Systems," $2,698,142, 1/1999-1/2004, (Co-investigator)
- UM-Research Board Award, "Systolic architectures to process RLE-compressed images," $33,355, 2/99-2/2000, (PI)

- NSF, "Research Experiences in Parallel Linear Algebra," $150,000, 3/1/1997-2/28/2000, (Co-investigator with Daniel Okunbor)
- DARPA/ETO (Subcontract to AEI), "Development of Fast and Scalable Automated Inspection Systems for Multi-Layer Printed Circuit Boards," $440,101 ($40K, MST Match), 12/1/96-12/1/99, (Principal Investigator)
- NSF, "Parallel Processing: Design, Analysis, and Implementation of Parallel Algorithms," $56,819, 6/1/1994-5/31/1995, (Principal Investigator).
- UM-Research Board Award, "A Hierarchical Approach to Skin Tumor Diagnosis", $20,000, 6/1/93-5/31/94 (Principal Investigator).
- Stoecker & Associates, "Algorithms for Pigmented Lesion Screening and Detection", $9,402, 8/1/93-1/31/94 (Principal Investigator)
  [subcontract to NIH-SBIR, "Algorithms for Pigmented Lesion Screening and Detection", $50,000, 8/1/93-1/30/94 (Investigators V.W. Stoecker, F. Ercal, R. Moss and S. E. Umbaugh)]
- NCSA (National Center for Supercomputing Applications), Univ. of Illinois, "Robust and Efficient Algorithms for Solving Stiff PDEs on Massively Parallel Comp.," $300,000 (200 hrs. of computing time on CM-5), 3/1/94-2/28/95 (Co-investigator with D. Okunbor and R. Batra)
- NSF-CISE Research Instrumentation, $100,000, 3/1/1993-2/28/1994 (Co-investigator)
- University Partner in Computer Science Education, *Intel Scientific Computers*, $29,725, 1/1/1991-1/1/1992, (Principal Investigator)
- University Partners in Computer Science Research, *Intel Scientific Computers*, $60,220, 4/1/1991-3/31/1992, (Co-investigator)
- MST, Opportunities For Undergrad. Research Experiences, $1,200, 5/1/93-5/1/94.
- NATO, Advanced Study Institute (ASI), $62,640, 1991-92. (Co-Director with F. Ozguner)

PROFESSIONAL ACTIVITIES

Member: University of Missouri Research Board (2002-06)
Editorial Board: Selcuk Journal of Applied Mathematics (2003-present)
Area Editor: IEEE Distributed Systems Online (2000-2002).
Associate Editor: Intl. Journal of Parallel and Distributed Systems and Networks (1998-2003).
Associate Editor: Science Letters (online journal)(2000-2004).
Program Committee co-Chair: (1998-2004) International Workshop on Nature Inspired Distributed Computing (NIDISC)
General co-Chair: (2005-2007) International Workshop on Nature Inspired Distributed Computing (NIDISC)
Editor: IEEE TCPP Newsletter (1997 - 2002)
co-Guest Editor: Special Issue of the J. of Future Computer Systems on *Bio-Inspired Solutions to Parallel Processing Problems*, 1998, 2001.
Program Committee Membership: Intl. Conf. on Software and Data Technologies (ICSOFT 2008-2012), IASTED ISC 2011, 2nd World Congress on Computer Science and Information Engineering (CSIE 2011), IADIS Intl. Conf. Intelligent Sys. and Agents (2008-2010), IADIS Multi Conference on Computer Science and Information Systems (MCCIS 2008-2009), ISA 2008, 23rd Intl. Symposium on Computer and Information Sciences (ISCIS 2008), 1st IEEE International Workshop on Service Oriented Technologies for Biological Databases and Tools (SOBDAT 2007), 2005 International Parallel and Distributed Processing Symposium (IPDPS-05), 2003

ACS/IEEE International Conference on Computer Systems and Applications, Tunisia, The Sixth Intl. Sym. on Parallel Algorithms, Architectures and Networks (I-SPAN'02), IEEE Intl. Sym. on Cluster Computing and the Grid (CCGrid2001), 2001 IEEE International Sym. on Cluster and (global) Network Computing (CNC'2001), 10th International Conference on Computing and Information (ICCI'2000), 2000 Parallel and Distributed Methods for Image Processing IV, 2000 International Conference on Parallel Processing (ICPP-2000), 1999 Intl. Conf. on High Perf. Comp (HiPC'99), 1999 Parallel and Distributed Methods for Image Proc. III, 1999 Intl. Sym. on Parallel Algorithms, Architectures and Networks (I-SPAN'99), 11th Intl. Conf. on Parl. & Dist. Comp. Sys. (PDCS'98), PDCS'97, 4th Intl. Conf. on High Perf. Computing (1997), 7th IEEE Symposium on Parallel and Distributed Proc. (1995), Intel Supercomputer Users' Group Conference (ISUG-1996), 3rd Workshop on Reconfigurable Arch. & Algorithms (April 1996).

Organizing Committee: NATO - Advanced Study Institute, Ankara, July 1-12, 1991

Session Chair: Intl. Parl. & Distr. Proc. Symposium (Session 2, 2001, San Francisco), 4th BioSP^3 Workshop (2001), 1st BioSP^3 Workshop (1998), 1997 International Parallel Processing Symposium, 7th IEEE Symposium on Parallel and Distributed Processing (1995), 1994 International Conference on Artificial Neural Networks in Engineering, 1990 International Conference on Communication, Control, and Signal Processing, 1990 International Symposium on Computer and Information Systems

IEEE Service: Vice-Chair for Rolla-Subsection (1994-97), one of the five members who initiated the IEEE Turkey Branch in 1989

IEEE Senior Member: since June 1994

Executive Committee Member: IEEE Technical Committee on Parallel Processing (1997-2002)

Board of Directors and founding member, ITU Alumni Assoc. - Intl. Branch, 1996-present

Honorary member: Phi Eta Sigma (1998-present)

Member of Scientific Council: National Institute for Turkish Language, 1989-1995.

Referee: IEEE Transactions on Parallel and Distributed Systems, IEEE Trans. on Computers, Journal of Parallel and Distributed Computing, IEEE Computer, Parallel Computing Journal, and many international conferences including IPPS, ICPP and IEEE-PDP.

Consulting: CITATION Inc. (software company), St.Louis (1994-95), National Institute for Turkish Language, established the first computer network for the institute (1989-1992)

Book Review *Hypercube Algorithms For Image Processing and Pattern Recog.,* Springer-Verlag, 1990

NSF Review Panel: ITR Proposals (2000)

Reviewer proposals for NASA and UM-Research Board

Judge: 35th International Science and Eng. Fair (represented IEEE Computer Society, May 1984)

INVITED TALKS

Konya Selcuk University, Turkey, "Bioinformatics Applications in Parallel EST Clustering and Gene Family Identification", July 10, 2006.

Istanbul Kultur University, Turkey, "Bioinformatics Applications in Parallel EST Clustering and Gene Family Identification", June 21, 2006.

Biological Sciences Department, MST, "Gene and EST Clustering in Soybean," March 7, 2005.

Chem.Eng.Dept., MST, "Parallel Hash-Based EST Clustering For Gene Sequencing," April 20, 2004.

SSGRR'2000 Conference: Advances in Infrastructure for Electronic Business, Science, and Education on the Internet, L'Aquila, Italy, August 4, 2000.

Arizona State University, Computer Science & Engineering Department, Phoenix AZ,
"Fast Image Operations in RLE Domain: Software/Hardware Approach," February, 1999.

Yuan-Ze Institute of Technology, College of Informatics, Taiwan, "Segmentation and Processing of PCB Images

In Compressed Mode," December 19, 1997.

Istanbul Technical University, Istanbul, "Pattern-Oriented Inspection of PCB Images In Compressed Mode," July 16, 1998.

Poltechnic University, Brooklyn, New York, "A Fast Modular RLE-based Inspection Scheme for PCBs," October 17, 1997.

Selcuk University, Konya, Turkey, "New Trends in Parallel Processing: Algorithms, Architectures, Languages," July 2, 1998.

Selcuk U., Turkey, "Pattern-Oriented Inspection of PCB Images in Compressed Mode," July 1, 1998.

ACM, MST Student Chapter, "Parallel Programming Using MPI,", Feb. 19, 1998

IEEE-ITU Branch, Istanbul Technical University, Istanbul, "Efficient Parallel Algorithms For Reconfigurable Mesh Arhitectures," June 26, 1996.

IEEE-ITU Branch, Istanbul Technical University, Istanbul, "Parallel Graph Partitioning on a Hypercube," June 1993.

ACM, MST Student Chapter, "Parallel Computing on Hypercubes,", March 26, 1991

IEEE Turkey Section, Middle East Technical University, Ankara, "Introduction to Parallel Computing," July 11, 1991

Konya College Alumni Association, Ankara "Recent Advances in Computer Communications and Networks," July 1991

Wright State University, Dept. of Computer Science and Engineering, Dayton, OH, April 1, 1988 "Task Partitioning and Load Balancing For Parallel Computing"

SUNY-Buffalo, Dept. of Computer Science, Buffalo, NY, March 24, 1988, "Nearest-Neighbor Mapping of Finite Element Graphs Onto Processor Meshes,"

Georgia Institute of Technology, School of Information and Computer Science, Atlanta, GA, March 9-10, 1988. "Heuristic Approaches to Task Allocation For Parallel Computing"

TEACHING and STUDENT SUPERVISION

Courses Taught at MST

CSc 487 - Advanced Parallel Computation (Graduate)
CSc 485 - Distributed Computing (Graduate)
CSc 387 - Parallel Programming with MPI (Graduate/Undergraduate)
CSc 385 - Computer Communications and Networks (Graduate/Undergraduate)
CSc 355 - Intro to Algorithms (Graduate/Undergraduate)
CSc 284 - Introduction to Operating Systems (Undergraduate)
CSc 253 - Data Structures II (Undergraduate)
CSc 234 - Intro. to Computer Organization & Assembly Language (Undergraduate)
CSc 235 - Computer Organization (Undergraduate)
CSc 228 - Intro. to Numerical Methods (Undergraduate)

c) Dissertations/Theses Supervised

1. Madhav Moganti (Ph.D., May 1996), "An Automated Modular Approach to the Segmentation and Inspection of Printed Circuit Boards"
2. Hsi-Chieh Lee (Ph.D., Dec. 1996), "Efficient Parallel Algorithms on Reconfigurable Mesh Architectures"
3. Sinar Pait (M.S., May 1992), "A Parallel Solution Method for Large Sparse Linear Systems of Equations on Multicomputers"
4. Anurag Chawla (M.S., May 1993), "Diagnosing Malignant Melanoma Using Artificial Neural Networks" .
5. Angela Lammers (co-advisor, M.S., May 1993), "Cartographic Pattern Recognition Using Template Matching".
6. Matthias Mayer (M.S., May 1993), "Parallel Genetic Algorithms for the DAG Vertex Splitting Problem"
7. Mihai Sirbu (M.S., Summer 1993), "X.500 Directory Service Support For Electronic Mail"
8. Chiung-Kuang Chou (M.S., Dec. 1993), "Predictive Classified Vector Quantizer For Image Coding in the DCT Domain"
9. Hsi-Chieh Lee (M.S., May 1994), "Skin Cancer Diagnosis Using Hierarchical Neural Networks And Fuzzy Logic"
10. Madhav Moganti (co-advisor, M.S., May 1994) "PCB Inspection Using Differential Competitive Learning And Fuzzy Associated Memories"
11. Mustafa Keskin (M.S., Summer 1994), "Parallel Adaptive Mesh Refinement Algorithms For Unstructured 2D Meshes"
12. Nariman M. Abdelbaky (co-advisor, M.S., Dec. 1994), "Performance Monitoring of Hybrid Intelligent System"
13. Ramkumar Swaminathan (M.S., Dec. 1995), "Development of a Motif-based User Interface and the Simulation of Parallel Multi-Terminal Maze Routing Algorithms"
14. Vinay Anneboina (co-advisor, M.S., May 1996), "Comparison of Finite Element Analysis and Finite Difference Methods For PDEs"
15. Olga Shumsky (co-advisor, M.S., May 1996), "New Methods in Finite First-Order Model Search"
16. Venkat Yellepedy (M.S., May 1997), "Segmentation of Printed Circuit Board Images"
17. John Stone (M.S., May 1998), "An Efficient Library For Parallel Ray Tracing and Animation"
18. Ozer Ozdemir (M.S., Dec. 2000), "An Efficient and Inexpensive Method For Real-Time Panaromic Video Processing"
19. Qiang Niu, (M.S., May 2002), "Automated Mobile Highway Sign Retroreflectivity Measurement,"
20. Pramodh Narayanan (M.S., May 2003), "Processor Allocation in 2D Mesh-Connected Multicomputer"
21. Ramesh Mudhireddy (M.S., Dec. 2003), "Parallel EST Clustering For Gene Sequencing"
22. Matthew Ryan Buechler (co-advisor, M.S., May 2005), "The Metrics and Logistics of Instructing Software Systems Development: Balancing Professional Development, Communication, and Engineering"

23. Ajay Mane (co-advisor, M.S., May 2006), "An Automated Method For Rapid Identification of Putative Gene Family Members in Plants"

24. Bhagyesh Babubhai Patel (co-advisor, M.S., August 2006), "Identification of Character Non-Independence in Phylogenetic Data Using Parallelized Rule Induction From Coverings"

25. Cyriac Kandoth (co-Advisor, M.S., Dec. 2007), A QUANTITATIVE STUDY OF GENE IDENTIFICATION TECHNIQUES BASED ON EVOLUTIONARY RATIONALES

26. Mohammed Das (co-Advisor, M.S., Dec. 2007), IMAGE ANALYSIS TECHNIQUES FOR VERTEBRA ANAMOLY DETECTION IN X-RAY IMAGES

27. Vikas Nahar (co-Advisor, M.S., Dec. 2009), CONTENT BASED IMAGE RETRIEVAL FOR BIOMEDICAL IMAGES

28. Cyriac Kandoth (Advisor, Ph.D., May 2010), COMPUTATIONAL METHODS FOR THE DISCOVERY AND ANALYSIS OF GENES AND OTHER FUNCTIONAL DNA SEQUENCES

UNIVERSITY SERVICE

Campus & College-wide Committees:
Recruitment Faculty Ambassador (2007-2009), International Student Recruitment Ambassador (2007-2009)
Professional Science Masters Committee (2007)
Faculty Advisor: MST Tennis Club, TSA, and UPE (2006-2012)
Faculty Senate (2009-2012), Global Studies Minor Advisory Committee (2009-2011)
Academic Freedom & Standards (2009-2011)
University of Missouri Research Board (2002-2006)
Campus Tenure and Promotion Committee (2003-04), Campus Third Year Review Committees (2003-04)
Tenure and Promotion Committee, School of Management & Information Systems (2003-04)
CAS Dean Search Committee (2001-02)
Search Committee for Schlumberger Chaired Professorship (2000)
Computer Engineering Steering Committee (1998-2001)
Manufacturing Mission Enhancement Committee (1997-98)
Academic Assessment (elected, 1997-99), CAS Promotion & Tenure (1997-98, 2001-02)
Program Planning Study (1997-2000), Computer Policy Committee (1994-97, 2000-2003)
Campus Tenure Committee (1996-98)
Bioinformatics Faculty Search Committee (2001-02)
Search Committee for Finley and Tang Professorships in ECE (1997)
Manufacturing Education Committee (1998-present), CAS Curriculum (1996-97)

Departmental Committees:
Peer Teaching Evaluations Committee (2009-2012), Undergraduate Curriculum (2010-2012), ABET Coordinator for CS-284 (2009-2010), Graduate Policy & Procedures Committee (2007-2009), MST-Computer Science Strategic Planning Committee (2008), Computer Science Awards Committee (2008), CS academy/advisory board coordinator (2008), Tenure and Promotion Guidelines (1997-98), Tenure and Promotion (chair, 2001), Three Year Review (chair, 1998,99), Computer Organization Coordination (chair, 1997-98), Parallel & Distributed Computing Lab. (chair, 1997-98) Faculty Search (1992-1998, 2001-2002, chair 1994-95, 1999-2000), Teaching Evaluations (chair, 1993-94), Comps/Quals Examination (1991-96, coordinator 1994-96), Computer Science Chair Search (1993-94), Graduate Faculty (1990-present), GTA Appointments (1991-96), Faculty Mentoring (1993-94), Computer Policy (1992-97, 2000-2002), CS Laboratory Advisory Committee (chair, 2000-2001) Computer Architecture Committee (2001-2002)

Faculty Advisor: ACM Student Chapter, MST (1999-2002)
Coach: ACM Programming Team, MST (2000-2002)
Founder & Director: Computer Vision Laboratory, (Dec. 1996-2003)
Co-Director: NSF-Research Experiences For Undergraduates Institute, Summer 1997-2000
Director: NSF-Research Experiences For Undergraduates Summer Institute, June-July 1994
Doctoral Faculty: Missouri University of Science & Technology (1990-present)
Departmental coordinator UMR "Introduction to Engineering" summer program, 1995-98.
Coordinator: *Scientific Computing* Focus Area, Intelligent Sys. Center, MST, 1993-97
Coordinator and Founder: Graduate Seminar Series, Intelligent Systems Center, 1995-2001
Chair & Organizer: Computer Science Colloquium Series, 1992-97
Reviewer: UM-Research Board proposals, 1993-2002
Judge: UM-Columbia Ninth Annual Research and Creative Activities Forum (1992), Undergraduate Research Symposium, (1992)
Service at Bilkent University (1988-90): Established and directed the *Parallel Processing Laboratory* which owned the first distributed-memory multicomputer in Turkey at the time. Developed an undergraduate curriculum for the Computer Science Department. Created grad/undergrad courses.

Community Service:

- Paul Harris Fellow, Rotary International (April, 2002)
- Board of Directors, Turkish-American Association of St. Louis (2001-2003);
- Board of Directors, Rolla Rotary Club (1994-95 and 1997-98);
- Faculty Advisor, Turkish Student Association, MST (1994-97);
- Chair of various service committees at Rolla Rotary Club (1993-1999);
- Served as a judge in South Central Missouri Regional Science and Eng. Fair (Spring 1995 and 1996);
- Organized a Rotary Summer Project to introduce Internet and World Wide Web to High School Students in the area (August 1995).

PUBLICATIONS AND OTHER SCHOLARLY CONTRIBUTIONS

Books Edited

Solutions to Parallel and Distributed Computing Problems: Lessons from Biological Sciences, John Wiley, New York, USA, 304pp., (ISBN 0471353523), 2000, Guest Editors: A. Zomaya, F. Ercal, and S. Olariu.

Parallel and Distributed Processing, Lecture Notes in Computer Science, J. Rolim et al. (Eds.), vol. 1800, Springer-Verlag, Berlin, 2000.

Parallel and Distributed Processing, Lecture Notes in Computer Science, J. Rolim et al. (Eds.), vol. 1586, Springer-Verlag, Berlin, Feb 1999.

Proceedings of First Workshop on Biologically Inspired Solutions to Parallel Processing Problems, (Eds.) A. Zomaya, F. Ercal, and S. Olariu (Published in volume *Parallel and Distributed Processing*, Lecture Notes in Computer Science, J. Rolim (Ed.)), 1388, Springer-Verlag, Berlin, March 1998.

Parallel Computing on Distributed Memory Multiprocessors
Eds: Fusun Ozguner and Fikret Ercal, Springer-Verlag, Berlin, 1993.

Book Chapters and Magazine Articles

J. Stone and F. Ercal, "Workstation Clusters for Parallel Computing," *IEEE Potentials*, pp.31-33, April/May 2001.

W. V. Stoecker, Z. Zhao, R. H. Moss, S. E Umbaugh, and F. Ercal, "Boundary Detection Techniques in Medical Image Processing," (invited chapter), Chapter 1, pp. 1-84 in *Medical Imaging Systems, Techniques and Applications:General Anatomy*, Gordon & Breach, Newark, NJ, 1997.

M. Moganti and F. Ercal, "Automatic PCB Inspection Systems," *IEEE Potentials*, Aug.1995, pp.6-10

F. Ercal, N.L. Book and S. Pait, "Sparse LU-Decomposition for Chemical Process Flowsheeting on a Multicomputer," in *Parallel Computing on Distributed Memory Multiprocessors*, eds. F. Ozguner and F. Ercal, Springer-Verlag, pp. 151-164, 1993.

W.V. Stoecker, R.H. Moss, D.A. Perednia, S.E. Umbaugh, and F. Ercal, "Visible-Light Digital Imaging In Dermatology," Chapter 10 in *Computer Applications in Dermatology*, ed: W. V. Stoecker, New York, Igaku-Shoin Inc., pp. 85-116, 1993.

Journal Papers

C. Kandoth, F. Ercal, and R. Frank, "A framework for automated enrichment of functionally significant inverted repeats in whole genomes", *BMC Bioinformatics*. October 2010, 11(Suppl 6):S20

R. Frank, C. Kandoth, and F. Ercal, " Validation of an NSP-based (Negative Selection Pattern) gene family

identification strategy," *BMC Bioinformatics*, 9(Suppl 9):S2 August 2008.

R. Frank, A.Mane, and F. Ercal, "An Automated Method for Rapid Identification of Putative Gene Family Members in Plants," *BMC Bioinformatics*, 2006, Volume 7, Suppl 2:S19

R. Frank and F. Ercal, "Evaluation of Glycine max mRNA clusters," *BMC Bioinformatics*, 2005 Jul 15, Volume 6, Suppl 2:S7

R. Mudhireddy, F. Ercal, and R. Frank, "Parallel Hash-Based EST Clustering Algorithm For Gene Sequencing," *DNA and Cell Biology*, Oct 2004, Vol. 23, No. 10: 615-623.

J. Ramanujam, F. Ercal and P. Sadayappan, "Mapping by Adaptive Simulated Annealing," *Parallel Computing* (under review)

F. Ercal, M. Allen, and H. Feng, "A Systolic Image Difference Algorithm for RLE-Compressed Images," *IEEE Transactions on Parallel and Distributed Computing Systems*, Vol. 11, no.5, pp.433-443, May 2000.

F. Ercal, H. C. Lee, W. V. Stoecker, and R. H. Moss, "Skin Cancer Classification Using Hierarchical Neural Networks and Fuzzy Systems," *International Journal of Smart Eng. Systems Design*, Vol. 1, pp. 273-289, 1999.

P. Sadayappan, F. Ercal, and J. Ramanujam, "Partitioning graphs on message-passing machines by pairwise mincut," *Information Sciences*, Elsevier, Vol. 111, pp. 223-237, Nov. 1998.

F. Ercal and H. C. Lee, "Time-efficient maze routing algorithms on reconfigurable mesh architectures," *Journal of Parallel and Distributed Computing*, 44(2):133-140, August 1997

M. Moganti and F. Ercal, "Sub-Pattern Level Inspection System for Printed Circuit Boards," *Computer Vision and Image Understanding*, Vol. 70, No. 1, pp. 51-62, April 1998.

M. Moganti and F. Ercal, "Segmentation of Printed Circuit Board Images into Basic Patterns" *Computer Vision and Image Understanding*, Vol. 70, No. 1, pp. 74-86, April 1998.

M. Moganti, F. Ercal, C. H. Dagli, and Shou Tsunekawa, "Automatic PCB Inspection Algorithms: A Survey," *Computer Vision and Image Understanding*, Vol. 63, No. 2, pp. 287-313, March 1996.

W. V. Stoecker, R. H. Moss, F. Ercal, and S. E. Umbaugh, "Nondermatoscopic digital imaging of pigmented lesions," *Skin Research and Technology*, Vol.1, No.1, February 1995, pp.7-16.

F. Ercal, N. L. Book, S. Pait, and J. J. Fielding, "An Efficient Multicomputer Algorithm for the Solution of Chemical Process Flowsheeting Equations," *Computers and Chemical Engineering*, Vol. 19, No. 1, pp. 91-104, 1995.

F. Ercal, A. Chawla, W. V. Stoecker, H. C. Lee, and R. H. Moss, "Neural Network Diagnosis of Malignant Melanoma From Color Images," *IEEE Transactions on Biomedical Engineering*, Vol. 41, No. 9, pp. 837-845, September 1994.

F. Ercal, M. Moganti, W. V. Stoecker, and R. H. Moss, "Detection of Skin Tumor Boundaries in Color Images,"

IEEE Trans. on Medical Imaging, Vol. 12, No. 3, pp. 624-627, Sept. 1993.

F. Ercal, "Distributed Evaluation of an Iterative Function for All Object Pairs on an SIMD Hypercube" *Information Processing Letters*, Vol. 40, pp. 341-345, Dec. 1991. (also presented at em The Fifth Distributed Memory Computing Conference (DMCC5), Charleston, SC, pp. 364-369, April 1990)

F. Ercal, J. Ramanujam, and P. Sadayappan, "Task Allocation onto a Hypercube by Recursive Mincut Bipartitioning," *Journal of Parallel and Distributed Computing,* Vol. 10, No. 1, pp. 35-44, Sep. 1990.

P. Sadayappan, F. Ercal, and J. Ramanujam, "Cluster partitioning approaches to mapping parallel programs onto a hypercube," *Parallel Computing,* Vol. 13, No. 1, pp. 1-16, 1990.

C. Aykanat, F. Ozguner, F. Ercal, and P. Sadayappan, "Iterative Algorithms for Solution of Large Sparse Systems of Linear Equations on Hypercubes," *IEEE Transactions on Computers*, Vol. C-37, No. 12, pp. 1554 - 1568, Dec. 1988.

P. Sadayappan and F. Ercal, "Nearest-Neighbor Mapping of Finite Element Graphs Onto Processor Meshes," *IEEE Transactions on Computers*, Vol. C-36, No. 12, pp. 1408 - 1424, Dec. 1987.

Edited Volumes

Special Issue of the *International Journal of Foundations of Computer Science* on *Advances in Parallel and Distributed Computational Models*, Vol. 16, No. 2, April 2005, Guest Editors: E. Alba, F. Ercal, E. Talbi, and A. Zomaya.

Special Issue of the journal *Parallel Computing: Theory & Applications* on *Parallel and Nature-Inspired Computational Paradigms and Applications*, Vol. 30, Issues 5-6, May/June 2004, Guest Editors: A. Zomaya, F. Ercal, and E. Talbi.

Special Issue of the J. of Future Generation Computer Systems on *Bio-Inspired Solutions to Parallel Processing Problems*, Vol. 17, No. 4, (2001), Guest Editors: A. Zomaya, F. Ercal, and S. Olariu,

Special Issue of the J. of Future Generation Computer Systems on *Bio-Inspired Solutions to Parallel Processing Problems*, Vol. 14, No. 5-6 December 1998, Guest Editors: A. Zomaya, F. Ercal, and S. Olariu,

Newsletter of the Parallel Processing Technical Committee, IEEE Computer Society Press, Volume 6, No. 2, January 1999.

Newsletter of the Parallel Processing Technical Committee, IEEE Computer Society Press, Volume 6, No. 1, June 1998.

Newsletter of the Parallel Processing Technical Committee, IEEE Computer Society Press, Volume 5, No. 1, Oct. 1997.

Newsletter of the Parallel Processing Technical Committee, IEEE Computer Society Press, Volume 4, No. 2,

Feb. 1997.

Conference Publications

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