

Curriculum Vitae

Tarek A. El-Ghazawi, Professor

Department of Electrical and Computer Engineering
The George Washington University
Academic Center, Suite 601
801 22nd Street, N.W.
Washington, D.C. 20052

(202)994-2607 [Voice]
(202)994-0227 [Fax]
tarek@gwu.edu [Email]
<http://www.seas.gwu.edu/~tarek>

PRESENT OCCUPATION:

Professor(tenured), Department of Electrical and Computer Engineering, **The George Washington University**, Washington D.C.

Director, The High-Performance Computing Laboratory (HPCL), GWU.

EDUCATION:

Doctor of Philosophy in Electrical and Computer Engineering, New Mexico State University, May 1988

Dissertation Topic: Theory and Design of a Real-Time Motion Detection Computer System

Major Field: **Computer Engineering**

Minor Field: **Computer Science**

Master of Science in Electrical and Computer Engineering, New Mexico State University, May 1984

Major Field: Computer Control Systems

Thesis Title: Analytical Design of Digital Controllers with Minimum Settling Time

Bachelor of Science in Electronics and Communications Engineering, Helwan University, Cairo, Egypt, May 1980

AREAS OF RESEARCH INTEREST:

- High-Performance Computing
- Computer Architectures
- Reconfigurable and Embedded Computing Systems
- High-Performance Languages
- Performance Evaluations and Workload Characterization
- Image Processing and Remote Sensing Applications

PROFESSIONAL SOCIETIES:

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- IEEE Computer Society
- Association for Computing Machinery (ACM), ACM SIGARCH and SIGMETRICS
- SIAM, Society for Industrial and Applied Mathematics
- Phi Kappa Phi National Honor Society

HONORS:

- Phi Kappa Phi National Honor Society, 1986
- IBM Faculty Award, 2004
- Peace Fellowship, 1983
- Sponsored Research Awards, see below

SPONSORED RESEARCH:

1. The NSF Center for Reconfigurable High-Performance Computing (CHREC). Center Preparation Grant. NSF \$10K (3/06-2/07). Tarek El-Ghazawi (GWU P.I.). Center is a collaborative effort with UFL and is expected to operate by end of 2006 at an estimated annual budget of \$1.5M.
2. An Infrastructure for a Parallel C: UPC. DoD, \$870K. Tarek El-Ghazawi (P.I.). (6/04-6/07).
3. Libraries and Experiments for Reconfigurable Computing Machines. DoD, \$2.95M. Tarek El-Ghazawi (P.I.) Nik Alexandridis, Kris Gaj, Duncan Buell (Co-PIs). (4/02-8/06)
4. Emerging Parallel Architectures and High-Productivity Languages: A Pilot Study. ARSC/UAFB, \$50K. Tarek El-Ghazawi(P.I.).(3/05-5/05).
5. Accelerating UPC and High-Performance Reconfigurable Computing for HPC Centers. ARSC/UAFB, \$300K. Tarek El-Ghazawi (P.I.) (6/05-8/06).
6. A Reconfigurable Computing Architecture for On-Board Data Reduction and Cloud Detection. NASA, \$270K. Tarek El-Ghazawi (P.I.). (1/2004-12/2006).
7. Grid Computing for Authentication of Arabic Text. National Science Foundation, \$25K. El-Ghazawi. (10/2001-9/2003)
8. Parallel Dimension Reduction of Hyperspectral Data. NASA GSFC, \$106K. El-Ghazawi. (7/2001-6/2004)
9. Programming Models for Globally Addressable Memory Architectures (GAMA). SGI/DARPA BAA 02-09, \$200K. Tarek El-Ghazawi (P.I.). (7/02-6/03)
10. IP Tool: Managing Separate Intellectual Property to Support Embedded Systems Design. DoD, \$260K. N. Alexandridis (P.I.) and El-Ghazawi (Co-P.I.). (1/02-8/04)
11. Effective Use of Networked Reconfigurable Resources. DoD, \$325K. Tarek El-Ghazawi (P.I.) Nik. Alexandridis, Kris Gaj, and Brian Schott (Co-PIs). (11/00-10/02)

12. Towards an Efficient Shared Memory Parallel C Standard. DoD, \$391K. Tarek El-Ghazawi (P.I.) and Guy Robinson (Co-P.I.). (1/00-12/02)
13. Grid Computing in the NASA Context. RIACS, NASA Ames Research Center, \$60K. Tarek El-Ghazawi (P.I.). (10/00-8/01)
14. MAPS: Mathematical Applications with a Parallel-Beowulf System. National Science Foundation, \$200K. Tarek El-Ghazawi (Co-PI), with James Gentle (P.I.), Estela Blaisten, Rainland Lohner, John Wallin and Edward Wegman (Co-PIs). (10/99-9/01)
15. Low-Cost Science Processing with Parallel COTS Technology, NASA Goddard Space Flight Center Distributed Active Archive Center, \$270K. Tarek El-Ghazawi (P.I.). (9/98-6/01)
16. High-Performance Image Processing for Remote Sensing Data. NASA GSFC, \$25K. Tarek El-Ghazawi (P.I.). (10/00-09/01)
17. Kernel and User Level Support Concepts for File System Enhancement. Scyld Computing Corporation, \$17K. Tarek El-Ghazawi (P.I.). (10/99-2/00)
18. Reconfigurable Architectures for On-Board Image Processing. NASA GSFC, \$40K. Tarek El-Ghazawi (P.I.). (4/99-3/00)
19. Parallel Dimension Reduction for Remote Sensing Data. University Space Research Association, \$25K. Tarek El-Ghazawi (P.I.). (4/99-9/00)
20. High-Performance Registration of Synthetic Aperture Radar Data for Soil Moisture Mapping. United States Air Force, Arctic Region Supercomputing Center, \$91K. Tarek El-Ghazawi (P.I.). (1/99-5/00)
21. Video Image Registration on Parallel Clusters. Image Links Inc., \$18K. Tarek El-Ghazawi (P.I.). (1/99-6/99)
22. SIESIP: Seasonal/Interannual Earth Science Information Partner. NASA, \$2.85M. Tarek El-Ghazawi (Co-I), with *Menas Kafatos (P.I.)*. *Other members include COLA, GSFC, and Udel.* (3/98-2/01)
23. High-Performance Implementations of Wavelet-Based Processing for NASA Earth Science Imagery. NASA Mission To Planet Earth (MTPE), through CESDIS/USRA, \$70K. Tarek El-Ghazawi (P.I.). (3/97-5/98)
24. Parallel Wavelet-Based Image Registration on the Beowulf Architecture. NASA GSFC, Code 930, through CESDIS/USRA, \$72,926. Tarek El-Ghazawi (P.I.). (9/96-2/98)

25. PACET: A PC-Parallel Architecture for Cost Efficient Telemetry. *NASA GSFC, Code 500, \$126K*. Tarek El-Ghazawi (P.I.). (1/96-5/98)
26. Understanding and Improving High-Performance I/O Subsystems. *NASA HPCC Basic Research Program through USRA/CESDIS, \$149,950*. Tarek El-Ghazawi (P.I.) and Gideon Frieder (Co-PI). (8/93-9/96)
27. Massively Parallel Telemetry Processing. *NASA GSFC, Code 500, \$152,798*. Tarek El-Ghazawi (P.I.). (1/94-12/95)
28. Experimental Evaluation and Workload Characterization for High-Performance Computer Architectures. *USRA/Center of Excellence in Space Data and Information Sciences, \$86,778*. Tarek El-Ghazawi (P.I.). (1/94-5/95)
29. A Pilot Study on the Parallelization of a Water Quality Model for the Chesapeake Bay. Army Corps of Engineers (subcontract through Computer Science Corporation), with a high-performance computing equipment loan from Silicon Graphics Inc. \$5,000 plus equipment. Tarek El-Ghazawi (P.I.). (3/95-6/95)
30. Parallel Processing Techniques for Level-Zero Processing. *NASA Goddard Space Flight Center, Code 500, \$62,765*. Tarek El-Ghazawi (P.I.). (1/93-12/93)
31. Evaluating Early High-Performance Computing Systems. *USRA/CESDIS, \$26,184*. Tarek El-Ghazawi (P.I.). (6/93-12/93)

RESEARCH GIFTS AND EQUIPMENT DONATIONS:

Cash Gifts: IBM, Microsoft, and Starbridge

Parallel Computers: SGI 32 Processor Origin 2000, SGI Altix with MOATB reconfigurable boards, Cray XD1 with 12 Opterons and 12 User FPGAs.

Workstations and Reconfigurable Hardware: HP, ISI, Xilinx and AMI

Software: Numerous software gifts

EMPLOYMENT HISTORY:

Professor(tenured): Department of Electrical and Computer Engineering, The George Washington University, Washington, D.C. (8/2003-present) [Founding Director of the High-Performance Computing Laboratory (HPCL)] **Associate Professor:** (8/2001-6/2003)

Associate Research Professor: Department of Electrical Engineering and Computer Science, **The George Washington University**, Washington, D.C. (8/92-8/97) **Visiting Assistant Professor:** (8/90-8/92) **Assistant Professorial Lecturer:** (1/89-8/90)

Associate Professor of Computational Sciences and Computer Engineering (Tenured), School of Computational Sciences, with a courtesy appointment in the Department of Electrical and Computer Engineering, **George Mason University**, Fairfax, Virginia (8/98-8/2001)

Associate Professor of Computer Engineering and Computer Science, and Director of the Center for High-Performance Information Processing (CHIP), Florida Institute of Technology, Melbourne, Florida. (8/97-8/98)

Assistant Professor: Department of Computer Science, Frostburg State University, University of Maryland System, Frostburg, Maryland. (8/89-8/90)

Assistant Professor: Department of Electronics and Communications Engineering, Helwan University, Cairo, Egypt (8/88-8/89)

CONSULTING ACTIVITIES:

- International Business Machines(IBM)
- Arctic Region Supercomputing Center(ARSC)
- Goddard Earth Science and Technology (GEST) Center, NASA GSFC
- Center of Excellence in Space Data and Information Science (CESDIS), NASA Goddard Space Flight Center
- Research Institute for Advance Computer Science (RIACS), NASA Ames Research Center
- GMU/Hughes Applied Information Systems
- USC/Information Sciences Institute
- Image Links Inc.
- IRMA

ADVISORY BOARDS:

DSPLogic Technical Advisory Board, Minah Ventures Technical Advisory Board, Arctic Region Supercomputing Center Science Advisory Board, Advisory Board for the IEEE Task Force on Cluster Computing, OpenFPGA Consortium Steering Committee, UPC Language Consortium(convener).

PUBLICATIONS:

Books

1. T. El-Ghazawi, W. Carlson, T. Sterling, and K. Yelick, UPC: Distributed Shared Memory Programming. John Wiley & Sons Inc., New York, 2005. ISBN: 0-471-22048-5. (May 2005)

Book Contributions

2. Younis, Yeh, Kyriakopoulos, Alexandridis, and El-Ghazawi. Dependability of Reconfigurable Computing, with M. Younis et al, Chapter 23 in Dependable Computing, Edited by Diab and Zomaya, John Wiley and Sons. October 2005, ISBN 0-471-67422-2
3. T. El-Ghazawi, O. Frieder, J. Gaber, S. Alaoui, "Biologically Inspired Solutions for Task Mapping," in *Biologically Inspired Solutions for Parallel Processing*, edited by A. Zomaya, John Wiley & Sons Inc., New York, 2001. ISBN: 0-471-35352-3.
4. T. El-Ghazawi and G. Frieder, "Input/Output," in *The Encyclopedia of Computer Science*, edited by Anthony Ralston, Edwin Reilly, and David Hemmendinger, Nature Publishing Group, London, 2000. ISBN: 0-333-77879-0.
5. T. El-Ghazawi and G. Frieder, "Redundant Arrays of Inexpensive Disks (RAID)," in *The Encyclopedia of Computer Science*, edited by A. Ralston, E. Reilly, and D. Hemmendinger, Nature Publishing Group, London, 2000. ISBN: 0-333-77879-0.

Journal Papers

6. T. El-Ghazawi, F. Cantonnet, Y. Yao, S. Annareddy, A. Mohamed, Benchmarking Parallel Compilers for Distributed Shared Memory Languages: A UPC Case Study, *Journal of Future Generation Computer Systems*, North-Holland. Volume 22, Issue 7, Pages 764-775 (August 2006).
7. Esam El-Araby, Mohamed Taher, Tarek El-Ghazawi, Kris Gaj, David Caliga, and Nikitas Alexandridis, Overlapping I/O and Computations in Reconfigurable Computing Applications Architectures. *International Journal of Embedded Systems*. Vol 2 Nos 1/2, 2006.

8. Salem, F., M. Kafatos, T. El-Ghazawi, R. Gomez, and R. Yang, Hyperspectral image assessment of oil-contaminated wetland. *International Journal of Remote Sensing* 26, 811-821(11) (2005).
9. T. El-Ghazawi and J. Le Moigne, "Performance of the Wavelet Decomposition on Massively Parallel Computers, *International Journal of Computers and Their Applications*. Vol. 27, No2, 2005.
10. T.El-Ghazawi, K.Gaj, N. Alexandridis, F. Vroman, N. Nguyen, J. Radzikowski, P. Samipagdi, and S. Suboh, Performance Study of Job Management Systems., *Concurrency and Computation: Practice and Experience*, John Wiley & Sons, Ltd. Vol. 16 Issue 13, October 2004.
11. Sinthop Kaewpijit, Jacqueline Le Moigne, and Tarek El-Ghazawi, Feature reduction of hyperspectral imagery using hybrid wavelet-principal component analysis. *Optical Engineering* Vol 43 No 350, Feb 2004.
12. EL-Askary, Sarkar, Chiu, Kafatos and El-Ghazawi. Rain gauge derived precipitation variability over Virginia and its relation with the El Nino southern oscillation. *Advances in Space Research* Volume 33, Issue 3 , 2004.
13. El-Askary, H.M.; Sarkar, S.; Kafatos, M.; El-Ghazawi, T.A. A multisensor approach to dust storm monitoring over the Nile delta. *IEEE Transactions on Geosciences and Remote Sensing (TGARS)* Volume 41 No. 10, Oct. 2003.
14. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "Automatic Reduction of Hyperspectral Imagery Using Wavelet Spectral Analysis," *IEEE Transactions on Geosciences and Remote Sensing (TGARS)*, Vol. 41 No. 4, April 2003, pp 863-871.
15. H. Baala, O. Flauzac, J. Gaber, M. Bui, and T. El-Ghazawi, "A Self-Stabilizing Distributed Algorithm for Spanning Tree Construction in Wireless Ad-Hoc Networks," *Journal of Parallel and Distributed Computing (JPDC)*, Academic Press. 63(2003) 97-104.
16. P. Chalermwat, T. El-Ghazawi, and J. Le Moigne, "2-Phase GA-based Image Registration on Parallel Clusters," *Future Generation Computer Systems*, North-Holland Elsevier, vol. 17, pp. 467-476, 2001.
17. S. Alaoui, T. El-Ghazawi, O. Frieder, A. Bellaachia, and A. Bensaid, "Mapping Tasks onto Nodes: A Parallel Local Neighborhood Approach," *Future Generation Computer Systems*, North-Holland Elsevier, vol. 17, pp. 397-403, 2001.

18. A. Meajil, T.El-Ghazawi, T. Sterling, "Characterizing and Representing Workloads for Parallel Computer Architectures," *Journal of Systems Architecture*, North-Holland Elsevier, vol. 46, No. 1, Jan. 2000.
19. A. Zomaya, T. El-Ghazawi, and O. Frieder, "Parallel and Distributed Computations for Data Mining," *IEEE Concurrency*, vol. 7, No. 4. Oct.-Dec. 1999.
20. M. Kafatos, T. El-Ghazawi, S. Wang, and R. Yang, "Earth Observing Data Systems in the Internet Era," *Journal of Photogrammetric Engineering and Remote Sensing*, vol. 65, No. 5, May 1999.
21. S. Nastea, O. Frieder, and T. El-Ghazawi, "Load-Balanced Sparse Matrix-Vector Multiplications on Highly Parallel Computers," *Journal of Parallel and Distributed Computing*, vol. 46, No. 2, Nov. 1997.
22. A.Meajil, T.El-Ghazawi, and T. Sterling, "Performance Prediction Based on Workload Similarity," *Supercomputer*, vol. 13, Aug. 1997.
23. N. Adam, B. Edelson, T. El-Ghazawi, M. Halem, K. Kalpakis, N. Kozura, R. Medina, and Y. Yesha, "The Global Legal Information Network (GLIN)," *The American University Law Review*, vol. 46, No. 2, Dec. 1996.
24. T. El-Ghazawi and J. Le Moigne. "Multiresolution Wavelet Decomposition on the MasPar Massively Parallel System," *Journal of Computers and Their Applications*, vol. 1, No. 1, Aug. 1994.
25. T. El-Ghazawi and A. Youssef, "A General Framework for the Design of Adaptive Fault-Tolerant Routing Algorithms," *IEEE Transactions on Reliability*, vol. 42, No. 2, June 1993.
26. T. El-Ghazawi and A. Youssef, "Fault-Tolerance in Product Networks," *The International Journal of Mini and Microcomputers*, vol. 15, No. 3, Nov. 1993.

Conference Proceedings Papers

27. M. Taher and T. El-Ghazawi, "A Segmentation Model for Partial Run-Time Reconfiguration", *IEEE International Conference on Field Programmable Logic and Applications (FPL06)*, Madrid, Spain, August 2006.
28. M. Taher and T. El-Ghazawi, "Exploiting Processing Locality Through Paging Configurations in Multitasked Reconfigurable Systems", *IEEE Reconfigurable Workshop (RAW2006)*, Proceedings of International Parallel and Distributed Processing Symposium, Rhodes Island, Greece, April 2006.

29. E. El-Araby, T. El-Ghazawi and K. Gaj , A System-Level Design Methodology for Reconfigurable Computing Applications, IEEE Conference on Field Programmable Computing Technology (FPT 2005), Singapore, Dec 2005.
30. E. El-Araby, M. Taher, T. El-Ghazawi and J. Le Moigne Prototyping Automatic Cloud Cover Assessment (ACCA) Algorithm for Remote Sensing On-Board Processing on a Reconfigurable Computer, IEEE Conference on Field Programmable Computing Technology (FPT 2005), Singapore, Dec 2005.
31. J. Harkins, T. El-Ghazawi, E. El-Araby and M. Huang, Performance of Sorting Algorithms on a Reconfigurable Computer, IEEE Conference on Field Programmable Computing Technology (FPT 2005), Singapore, Dec 2005.
32. H. El-Askary, A. Agarwal,, T. El-Ghazawi, M. Kafatos, J. Le Moigne, "Enhancing Dust Storm Detection Using PCA based Data Fusion," 2005 IEEE International Geoscience and Remote Sensing Symposium, IGARSS'05, Seoul, Korea, July 25-29, 2005.
33. A. Agarwal, J. Le Moigne, T. El-Ghazawi and J. Joiner, "An Application of Wavelet Based Dimension Reduction to AIRS Data," 2005 Earth-Sun System Technology Conference, ESTC'05, Adelphi, Maryland, June27-30,2005.
34. D. Chavarria-Miranda, C. Coarfa, J. Mellor-Crummey, F. Cantonnet, T. El-Ghazawi, A. Mohanty, Y. Yao, An Evaluation of Global Address Space Languages: CoArray Fortran and Unified Parallel C, Symposium on Principles and Practice of Parallel Programming, ACM SIGPLAN, Chicago IL, June 2005
35. M. Taher, T. El-Ghazawi, "Fast Online Placement in FPGAs", Dynamic Reconfigurable Systems Workshop (DRS 2005), Innsbruck, Austria, March, 2005
36. M. Taher, E. El-Araby, T. El-Ghazawi, "Configuration Caching in Adaptive Computing Systems Using Association Rule Mining (ARM)", Dynamic Reconfigurable Systems Workshop (DRS 2005), Innsbruck, Austria, March, 2005
37. M. Taher, E. El-Araby, T. El-Ghazawi, K. Gaj, "Image Processing Library for Reconfigurable Computers", ACM/SIGDA Thirteenth International Symposium on Field Programmable Gate Arrays (FPGA 2005), Monterey, California, USA, February, 2005
38. T. El-Ghazawi, K. Gaj, N. Alexandridis, A. Michalski, D. Fidanci, M. Taher, E. El-Araby, E. Chitalwala, P. Saha, "Reconfigurable Computers: An Empirical Analysis", ACM/SIGDA Thirteenth International Symposium on Field

- Programmable Gate Arrays (FPGA 2005), Monterey, California, USA, February, 2005.
39. F. Cantonnet, T. El-Ghazawi, P. Lorenz and J. Gaber, Fast Address Translation Techniques for Distributed Shared Memory Compilers, International Parallel & Distributed Processing Symposium (IPDPS), IEEE, Denver CO, April 2005
 40. E. Chitalwala, T. El-Ghazawi, K. Gaj, N. Alexandridis. "Effective System and Performance Benchmarking for Reconfigurable Computers," IEEE Conference on Field Programmable Technology, IEEE FPT 2004, Brisbane, Australia, Dec. 6-8. 2004
 41. E. El-Araby, T. El-Ghazawi, J. Le Moigne, and K. Gaj "Wavelet Spectral Dimension Reduction of Hyperspectral Imagery on a Reconfigurable Computer," IEEE Conference on Field Programmable Technology, IEEE FPT 2004, Brisbane, Australia, Dec. 6-8. 2004
 42. S. Bajracharya, D. Misra, K. Gaj, T. El-Ghazawi. "Reconfigurable Hardware Implementation of Mesh Routing in Number Field Sieve Factorization," IEEE Conference on Field Programmable Technology, FPT 2004, Brisbane, Australia, Dec. 6-8. 2004
 43. S. Bajracharya, C. Shu, K. Gaj, and T. El-Ghazawi. "Implementation of Elliptic Curve Cryptosystems over $GF(2^n)$ in Optimal Normal Basis on a Reconfigurable Computer," IEEE FPL 2004, Antwerp, Belgium, Aug 30 - Sept 1 2004
 44. Jacqueline Le Moigne, Pen-Shu Yeh, Joanna Joiner, Greg Donohoe, Tarek El-Ghazawi, Abhishek Agarwal, and Wei Xia, Dimension Reduction of Hyperspectral Data on Reconfigurable Computers, The 2004 Earth Science Technology Conference, 22-24 June 2004, Palo Alto, California.
 45. Abhishek Agarwal, Ananth.K.S, Nikitas A Alexandridis, Tarek EI-Ghazawi, An Efficient Approach for Design Space Exploration using Static Constraints for IP-Based SoC Design, Accepted:The 2004 International Conference on Embedded Systems and Applications ESA'04-Las Vegas, Nevada. June, 2004.
 46. Abhishek Agarwal, Ananth.K.S, Nikitas A Alexandridis, Tarek EI-Ghazawi, An Open source Intellectual property Optimal Selection Tool, IPOST – (Level 1), Accepted: The 5th International Conference on Internet Computing (IC 2004) 2004 Las Vegas, Nevada. June, 2004.
 47. Suboh A Suboh, Yuebo Ma, Nikitas A Alexandridis, Tarek EI-Ghazawi, Applying Performance Analysis Techniques in SOC Design, The 2004 International Conference on Embedded Systems and Applications ESA'04-Las Vegas, Nevada. June, 2004.

48. H. Diab, M. Taher, P. Saha, and F. Cantonnet, Experience with Grid Computing Between the U.S. and Egypt. : The 5th International Conference on Internet Computing (IC 2004) 2004 Las Vegas, Nevada. June, 2004.
49. Cantonnet François, Yao Yiyi, Zahran Mohamed, El-Ghazawi Tarek, Productivity Analysis of the UPC Language, IEEE International Parallel and Distributed Processing Symposium (IPDPS) Performance Modeling, Evaluation and Optimization of Parallel and Distributed Systems (PMEO) workshop, 2004, Santa Fe New Mexico, April 26-30 2004
50. Sashisu Bajracharya, Chang Shu, Kris Gaj, Tarek El-Ghazawi , "Implementation of Elliptic Curve Cryptosystems over $GF(2^n)$ in Optimal Normal Basis on a Reconfigurable Computer" FPGA 2004, Monterey, California, USA February 22 - 24, 2004
51. Esam El-Araby, Mohamed Taher, Kris Gaj, Tarek El-Ghazawi, David Caliga, and Nikitas Alexandridis, "System-Level Parallelism and Throughput Optimization in Designing Reconfigurable Computing Applications", in Proceedings of the IEEE IDPDS2004, as part of the Reconfigurable Architecture Workshop 2004, Santa Fe, New Mexico, USA, April 2004.
52. Esam El-Araby, Mohamed Taher, Kris Gaj, Tarek El-Ghazawi, David Caliga, And Nikitas Alexandridis, "Exploiting System-Level Parallelism In The Application Development On A Reconfigurable Computer", IEEE International Conference On Field-Programmable Technology (Fpt'03). Tokyo, Japan, December 15-17, 2003
53. N. Nguyen, K. Gaj, D. Caliga, T. El-Ghazawi, "Implementation of Elliptic Curve Cryptosystems on a Reconfigurable Computer," Proc. IEEE International Conference on Field-Programmable Technology, FPT 2003, Tokyo, Japan, Dec. 2003.
54. M. Taher, E. El-Araby, A. Agarwal, T. El-Ghazawi, K. Gaj, J. Le Moigne, and N. Alexandridis, "Effective Implementation of a Generic Wavelet Filter on a Hybrid Reconfigurable Computer", 2003 MAPLD International Conference, Washington, DC, Sep. 2003.
55. Esmail Chitalwala, Tarek El-Ghazawi¹, Kris Gaj, and Nikitas Alexandridis, "Efficient Synthesis Approaches over Reconfigurable Computers" , 2003 MAPLD International Conference, Washington, DC, Sep. 2003.
56. Allen Michalski, Kris Gaj, Tarek El-Ghazawi, "Breaking the IDEA Cipher Using the Star Bridge HC-36 Reconfigurable Computer", 2003 MAPLD International Conference, Washington, DC, Sep. 2003.

57. Nghi Nguyen, Kris Gaj, David Caliga, Tarek El-Ghazawi, "Optimum Implementation of Elliptic Curve Cryptosystems on the SRC-6E Reconfigurable Computer", 2003 MAPLD International Conference, Washington, DC, Sep. 2003.
58. Michalski, K. Gaj, T. El-Ghazawi, "An Implementation Comparison of an IDEA Encryption Cryptosystem on Two General-Purpose Reconfigurable Computers," LNCS 2778, 13th International Conference on Field Programmable Logic and Applications, FPL 2003, Lisbon, Portugal, Sep. 2003, pp. 204-219.
59. El-Askary, H.; Kafatos, M.; Xue Liu; El-Ghazawi, T.; Introducing new approaches for dust storms detection using remote sensing technology, IEEE International Geoscience and Remote Sensing Symposium, 2003. IGARSS '03. Proceedings, July 2003.
60. A. Agarwal, Z. Yao, S. Wang, N. Alexandridis, and T. El-Ghazawi, "An Open XML IP Search Portal Prototype" ESA'03 - The 2003 International Conference on Embedded Systems and Applications, Las Vegas, Nevada, June 23 - 26, 2003.
61. I. Panagopoulos, G. Papakonstantinou, N. Alexandridis, and T. El-Ghazawi, "A comparative evaluation of models and specification languages for Embedded System design" Languages, Compilers, and Tools for Embedded Systems (LCTES-03), San Diego, Ca., June 11-13, 2003.
62. I. Panagopoulos, G. Papakonstantinou, N. Alexandridis, and T. El-Ghazawi, "Evaluating Models for the Behavioral Specification in System Level Design" Intl Conf Computer Science, Software Engineering, Information Technology, e-Business, and Applications (CSITeA'03), Rio de Janeiro, Brazil, June 5-7, 2003.
63. O. D. Fidanci, D. Poznanovic, K. Gaj, T. El-Ghazawi, and N. Alexandridis, "Performance and Overhead in a Hybrid Reconfigurable Computer," Reconfigurable Architectures Workshop (RAW), part of the Proceedings of the International Parallel and Distributed Processing Symposium (IPDPS) Workshops 2003, Nice, France, April 22-26, 2003
64. F. Cantonnet, Y. Yao, S. Annareddy, A. S. Mohamed, and T. El-Ghazawi, "Performance Monitoring and Evaluation of a UPC Implementation on a NUMA Architecture," Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems Workshop (PMEO-PDS'03), part of the Proceedings of the International Parallel and Distributed Processing Symposium (IPDPS) Workshops 2003, Nice, France, April 22-26, 2003
65. K. Gaj, T. El-Ghazawi, N. Alexandridis, J. Radzikowski, M. Taher, and F. Vroman, "Effective Utilization and Reconfiguration of Distributed Hardware Resources Using Job Management Systems," Reconfigurable Architectures Workshop (RAW), part of the Proceedings of the International Parallel and

Distributed Processing Symposium (IPDPS) Workshops 2003, Nice, France,
April 22-26, 2003

66. T. El-Ghazawi and F. Cantonnet, "UPC Performance and Potential: A NPB Experimental Study," Supercomputing'02, IEEE CS, Baltimore, Nov. 16-22, 2002.
67. El-Askary H., Sarkar S., Chiu L., Kafatos M., and El-Ghazawi T. "Rain Gauge Derived Precipitation Variability over Virginia and its Relation with the EL NINO Southern Oscillation (ENSO)" Committee On Space Research 34th COSPAR Scientific Assembly The Second World Space Congress 10-19 October 2002 Houston, TX, USA.
68. Hesham El-Askary, Sudipta Sarkar, Long Chiu, Menas Kafatos and Tarek El-Ghazawi EL NINO Southern Oscillation impact on Virginia Precipitation Conference on Earth-Observing and Atmosphere-Land-Ocean Interaction (COAA 2002) Fairfax, VA., October 2002.
69. O. D. Fidanci, H. Diab, T. El-Ghazawi, and N. Alexandridis, "Implementation Trade-offs of Triple-DES in the SRC Reconfigurable Computing Environment," MAPLD International Conference, Laurel, MD., September 2002.
70. M. Taher, K. Gaj, T. El-Ghazawi, and N. Alexandridis, "Job Management System Extension to Support SLAAC-1V Reconfigurable Hardware" MAPLD International Conference, Laurel, MD., Sep. 10-12, 2002.
71. J. Le Moigne, A. Cole-Rhodes, R. Eastman, T.El-Ghazawi, K. Johnson, S. Kaewpijit, N. Laporte, J. Morissette, N. S. Netanyahu, H. S. Stone, and I. Zavorin, "Multiple Sensor Image Registration, Image Fusion, and Dimension Reduction of Earth Science Imagery," ISIF/IEEE FUSION'02, Annapolis, July 7-11, 2002.
72. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "A Wavelet-based PCA Reduction for Hyperspectral Imagery," IEEE International Geoscience and Remote Sensing Symposium (IEEE IGARSS'02), Toronto, Canada, June 24-28, 2002.
73. K. Gaj, T. El-Ghazawi, F. Vroman, N. Nguyen, J. R. Radzikowski, P. Samipagdi, and S. A. Suboh, "Performance Evaluation of Selected Job Management Systems," Proceedings of IEEE International Parallel and Distributed Processing Symposium (PMEO-PDS'02), Fort Lauderdale, Florida, Apr. 15-19, 2002.
74. T. El-Ghazawi, S. Kaewpijit, and J. Le Moigne, "Parallel Adaptive Reduction of Hyperspectral Data to its Intrinsic Dimensionality," Third IEEE International Conference on Cluster Computing (Cluster'01), Newport Beach, California, Oct. 8-11, 2001.

75. T. El-Ghazawi and S. Chauvin, "UPC Benchmarking Issues," International Conference on Parallel Processing (ICPP'01), IEEE CS Press, Valencia, Spain, Sep. 3-7, 2001.
76. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "A Hybrid Algorithm for Automatic Detection of Hyperspectral Dimensionality, " IEEE International Geoscience and Remote Sensing Symposium (IEEE IGARSS'01), Sydney, Australia, July 9-13, 2001.
77. J. Vongsaard, L. S. Chiu, T. El-Ghazawi, M. Kafatos, and R. Yang, "The Continuous Tracking of Reflectivity Data from Multi-platform Observation Using Genetic Algorithm," IEEE International Geoscience and Remote Sensing Symposium (IEEE IGARSS'01), Sydney, Australia, July 9-13, 2001.
78. T. Gharib and T. El-Ghazawi, "A Low Overhead parallel Clustering Algorithm," International Conference on Parallel and Distributed Techniques and Applications (PDPTA), Las Vegas, June 2001.
79. N. Goharian, T. El-Ghazawi, and D. Grossman, " Enterprise Text Processing: A Sparse Matrix Approach," IEEE International Conference on Information Technology: Coding and Computing (ITCC 2001), Las Vegas, Apr. 2001.
80. K.Gaber, J.Bahi and T.El-Ghazawi, "Parallel Mining of Association Rules with a Hopfield Type Neural Network," The Twelfth IEEE International Conference on Tools with Artificial Intelligence (ICTAI-2000), Vancouver, British Columbia, Canada, Nov. 13-15, 2000.
81. N. Goharian, Tarek El-Ghazawi, David Grossman, and Abdur Chowdhury, "On the Enhancements of a Sparse Matrix Information Retrieval Approach. International Conference on Parallel and Distributed Techniques and Applications," Las Vegas, June 26-29, 2000.
82. Tarek El-Ghazawi, Chris Lynnes, Ming Zhu, and Marc Brown, "Science Processing of MODIS Earth Observing Data with a Parallel Cluster," International Conference on Parallel and Distributed Techniques and Applications, Las Vegas, June 26-29, 2000.
83. P. Charlemwat and T. El-Ghazawi, "Multiresolution Image Registration Using Genetics," IEEE International Conference on Image Processing, Kobe, Japan, Oct. 1999.
84. R. Yang, C. Wang, M. Kafatos, X.S. Wang, and T. El-Ghazawi, "Remote Data Access via the SIESIP Distributed Information System," 11th Scientific and Statistical Database Management (SSDBM'99), IEEE CS, Cleveland, July 1999.

85. J. Faik, M. Jiber, A. Bellaachia, and T. El-Ghazawi, "Optimum Expansion Embedding of Binary Trees in the X-mesh," International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'99), Las Vegas, June 1999.
86. N. Goharian, T. El-Ghazawi, and D. Grossman, "On the Implementation of Information Retrieval as Sparse Matrix Application," International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'99), Las Vegas, June 1999.
87. P. Chalermwat, T. El-Ghazawi, and J. LeMoigne, "GA-based Image Registration on Parallel Clusters," Lecture Notes in Computer Science, Springer-Verlag. IEEE Workshop on Biologically Inspired Solutions to Parallel Processing, San Juan, Apr. 1999.
88. S. M. Alaoui, O. Frieder, T. El-Ghazawi, "A Parallel Genetic Algorithm for Task Mapping on Parallel Machines," Lecture Notes in Computer Science, Springer-Verlag. IEEE Workshop on Biologically Inspired Solutions to Parallel Processing, San Juan, Apr. 1999.
89. J. Le Moigne, W. Xia, P. Chalermwat, T. El-Ghazawi, M. Mareboyan, N. Netanyahu, J. Tilton, W. Campbell, R. Crompt, "First Evaluation of Automatic Registration Methods," IEEE International Geoscience and Remote Sensing Symposium (IEEE IGARSS'98), Seattle, July 1998.
90. M. Kafatos, D. Ziskin, S. Wang, R. Yang, K. Li, T. El-Ghazawi, and H. Wolf. "The Seasonal To Interannual Earth Science Information Partner System," IEEE International Geoscience and Remote Sensing Symposium (IEEE IGARSS'98), Seattle, July 1998.
91. T. El-Ghazawi, P. Chalermwat, P. Pisama-Nga, A. Ozkaya, N. Speciale, and D. Wilson, "PACET: A PC-Parallel Architecture for Cost-Efficient Telemetry," IEEE Aerospace'98, Aspen, Mar. 1998.
92. T. El-Ghazawi, P. Chalermwat, and J. Le Moigne. "Wavelet-Based Image Registration on Parallel Computers," Supercomputing'97, IEEE CS, San Jose, Nov. 1997.
93. S. Nastea, T. El-Ghazawi, O. Frieder, "Performance Optimization of Combined Variable-Cost Computations and I/O," Lecture Notes in Computer Science, Springer-Verlag. Proceedings of the 4th International Symposium on Solving Irregularly Structured Problems in Parallel (IRREGULAR-97), Paderborn, Germany, June 1997.
94. A. Meajil, T. El-Ghazawi, and T. Sterling, "An Architecture-Independent Workload Characterization Model for Parallel Computer Architectures,"

- Proceedings of the Aizu International Symposium on Parallel Algorithms and Architecture Synthesis (PAS-97), Aizu, Japan, IEEE Computer Society Press, Mar. 1997.
95. S. Nastea, T. El-Ghazawi, and O. Frieder, "A Statistically-Based Multi-Algorithmic Approach for Parallel Sparse Matrix Computations," Proceedings of IEEE Symposium on the Frontiers of Massively Parallel Computations (Frontiers'96), Annapolis, MD., Oct. 1996.
 96. S. Nastea, O. Frieder, and T. El-Ghazawi, "Load-Balancing in Sparse Matrix-Vector Multiplication," Eight IEEE Symposium on Parallel and Distributed Processing, 1996.
 97. T. El-Ghazawi and J. Le Moigne, "Wavelet Decomposition on High-Performance Computing Systems," Proceedings of the 25th International Conference on Parallel Processing (ICPP'96), IEEE CS Press, Bloomingdale, IL., Aug. 1996.
 98. A. Meajil, T. El-Ghazawi, and T. Sterling, "A Quantitative Approach for Architecture-Invariant Workload Characterization," Lecture Notes in Computer Science, Springer-Verlag. Proceedings of PARA'96, Applied Parallel Computing, Copenhagen, Aug. 1996.
 99. M. Berry and T. El-Ghazawi, "An Experimental Study of Input/Output Characteristics of NASA Earth and Space Sciences Applications," Proceedings of IEEE International Parallel Processing Symposium (IPPS'96), Honolulu, Apr. 1996.
 100. S. Nastea, T. El-Ghazawi, and O. Frieder, "Parallel Input/Output Impact on Sparse Matrix Compression," Proceedings of the Data Compression Conference (DCC'96), IEEE CS, Snowbird, Apr. 1996.
 101. T. El-Ghazawi, "Characteristics of the MasPar Parallel I/O System," Proceedings of Frontiers'95, IEEE CS, McLean, VA., Feb. 1995.
 102. A. Chan, C. Chui, J. LeMoigne, H. Lee, J. Liu, and T. El-Ghazawi, "The Performance Impact of Data Placement for Wavelet Decomposition of Two Dimensional Image Data on SIMD Machines," Proceedings of Frontiers'95, IEEE CS, McLean, Feb. 1995.
 103. M. Baig, N. Alexandridis, and T. El-Ghazawi, "Single Processor-Pool MSIMD/MIMD Architectures," Proceedings of the Fourth IEEE Symposium on Parallel and Distributed Processing, Arlington, TX., Dec. 1992.

104. T. El-Ghazawi and A. Youssef, "A Unified Approach to Adaptive Fault-Tolerant Routing," Proceedings of the IEEE 12th International Conference on Distributed Computing Systems, Yokohama, Japan, June 1992.
105. M. Baig, T. El-Ghazawi, and N. Alexandridis, "Mixed-Mode Multicomputers with Load Adaptability," Lecture Notes in Computer Science, Berlin: Springer-Verlag. Proceedings of the Parallel Architecture and Languages "Parle 92", Paris, June 1992.
106. M. Taher, K. Gaj, T. El-Ghazawi, and N. Alexandridis, "Job Management System Extension to Support SLAAC-1V Reconfigurable Hardware," 2002 MAPLD International Conference, Laurel, MD., Sep. 10-12, 2002.
107. O. D. Fidanci, H. Diab, T. El-Ghazawi, and N. Alexandridis, "Implementation Trade-offs of Triple-DES in the SRC Reconfigurable Computing Environment," 2002 MAPLD International Conference, Laurel, MD., Sep. 10-12, 2002.
108. F. Salem, M. Kafatos, and T. El-Ghazawi, "Hyperspectral Image Analysis for Oil Spill Detection on Contaminated Land of Urban Areas," 3rd International Symposium Remote Sensing of Urban Areas, Istanbul, Turkey, 11-13 June 2002.
109. J. Vongsaard, L. S. Chiu, T. El-Ghazawi, J. Weinman, M. Kafatos, and R. Yang, "Automatic Morphing Using Image Registration: Application to Continuous Tracking of Rain Fields," American Meteorological Society (AMS), Mississippi River Climate and Hydrology, New Orleans, Louisiana, May 13-17, 2002.
110. L. Chiu, T. El-Ghazawi, J. Weinman, J. Vongsaard, R. Yang, and M. Kafatos, "Automatic Tracking Of Remote Sensing Precipitation Data Using Automatic Morphing: September 1999 Hurricane Floyd Case Study," European Geophysical Society (EGS'02) XXVII General Assembly, Nice, France, Apr. 21-28, 2002.
111. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "Spectral Data Reduction Via Wavelet Decomposition," SPIE's OE/Aerospace Sensing, Wavelet Applications IX, Orlando, Apr. 2002.
112. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "Hyperspectral Imagery Dimension Reduction Using Principal Component Analysis on the HIVE," Science Data Processing Workshop, NASA Goddard Space Flight Center, Feb. 26-27, 2002
113. J. Vongsaard, L. S. Chiu, T. El-Ghazawi, J. Weinman, M. Kafatos, and R. Yang, "The Comparison of the Continuous Tracking of Rain Rate and Reflectivity Data Using Genetic Based Wavelet Image Registration Technique," 3rd Plinius Conference on Mediterranean Storms (EGS'01), Baja Sardinia, Italy, Oct. 1-3, 2001.

114. F. Salem, M. Kafatos, T. El-Ghazawi, T. Gomez, and R. Yang, "Hyperspectral Image Analysis for Oil Spill Detection," 22nd Asian Conference on Remote Sensing (ACRS'01) Singapore, 5 - 9 Nov. 2001.
115. A. V. Staicu, J. R. Radzikowski, K Gaj, N. Alexandridis, and T. El-Ghazawi, "Effective Use of Networked Reconfigurable Resources," Proc. 2001 MAPLD Int. Conf., Laurel, MD., Sep. 2001.
116. S. Kaewpijit, J. Le Moigne, and T. El-Ghazawi, "Finding the Dimensionality of Hyperspectral Data," 2001 SPIE's OE/Aerospace Sensing, Algorithms for Multispectral and Hyperspectral Data VII, Orlando, Apr. 16-20, 2001.
117. F. Salem, T. El-Ghazawi, and M. Kafatos, "Remote Sensing and Image Analysis for Oil Spill Mitigation in the Red Sea," International Conference on Earth Observations and Global Information, Cairo, Egypt, Nov. 11-14, 2000.
118. J. Vongsaard, L. S. Chiu, and T. El-Ghazawi, "Image Registration Technique for Comparing Precipitation Radar data and Ground Validation data," Progress in Electromagnetics Research Symposium (PIERS), Cambridge, Massachusetts, July 5-14, 2000
119. Christopher Lynnes, Peter Smith, Larry Shotland, Tarek El-Ghazawi, Ming Zhu, "Level 1 Processing of MODIS Direct Broadcast Data," The 4th International Meeting on Direct Broadcast of Earth Observation Data, Dundee, Scotland, June 27-30, 2000.
120. J.Gaber, J.Bahi, T.El-Ghazawi and B.Toursel, "Analysis of Randomized on-line load distribution in static network," International Conference on Software Engineering Applied to Networking & Parallel/ Distributed Computing (SNPD'2000), Champagne-Ardenne, France, May 18-21, 2000.
121. M. Kafatos, R. Yang, L. Chiu, T. El-Ghazawi, Z. Li, J. McManus, C. Wang, X. S. Wang, H. Weir, and K-S Yang, "Data Access, Querying, and Analysis in a Distributed Data Information Framework Supporting Earth System Science. International Conference on Information Systems Analysis and Synthesis (SCI/ISAS'99 Multiconference), Orlando, July 1999.
122. J. Le Moigne, W. Xia, S. Chettri, T. El-Ghazawi, ... et. al, "Towards an Intercomparison of Automated Registration Algorithms for Multiple Source Remote Sensing Data," Image Registration Workshop (IRW'97), Greenbelt, MD., Nov. 1997.
123. P. Chalermwat, T. El-Ghazawi, and J. Le Moigne, "Image Registration by Parts," Image Registration Workshop (IRW'97), Greenbelt, MD., Nov. 1997.

124. W. Xia, J. Le Moigne, J. Tilton, B.-T. Lerner, E. Kaymaz, J. Pierce, S. Raghavan, S. Chettri, T. El-Ghazawi, M. Mareboyana, N. Netanyahu, and W. J. Campbell, and R. F. Crompt, "A Registration Toolbox for Multi-Source Remote Sensing Applications," Earth Observations and Environmental Information (EOEI'97), Alexandria, Egypt, Oct. 1997.
125. Meajil and T. El-Ghazawi, "A Framework for Performance Prediction of Parallel Systems Based on Workload Similarity," The Eighth SIAM Conference on Parallel Processing for Scientific Computing, PP '97, Minneapolis, MN., Mar. 14-17, 1997.
126. Ozkaya and T. El-Ghazawi, "An Electrostatic Particle_In_Cell (PIC) Simulations on the Intel Paragon," Proceedings of the Parallel and Distributed Computing and Systems, Orlando, Sep. 1995.
127. T. El-Ghazawi, J. Pritchard, and G. Knoble, "Applications of Massively Parallel Computing in Telemetry Processing," Proceedings of SPACEOPS'94, NASA and CCSDS, Greenbelt, MD, Nov. 1994.
128. T. El-Ghazawi, "Performance Evaluation of Early Systems: An HPC Perspective," Proceedings of the Sixth SIAM Conference on Parallel Processing for Scientific Computing, Norfolk, VA., Mar. 1993.
129. Baig, N. Alexandridis, and T. El-Ghazawi, "Cost and Performance Analysis of Partitionable SIMD/MIMD Architectures," Proceedings of the ISMM International Conference on Computer Applications in Design, Simulation, and Analysis, Orlando, FL., Mar. 1992.
130. Baig, T. El-Ghazawi, and N. Alexandridis, "A Highly Reconfigurable MSIMD/MIMD Architecture," Proceedings of the Fourth ISMM International Conference on Parallel and Distributed Computing and Systems, Washington D.C., vol. II, Oct. 1991.
131. T. El-Ghazawi and G. Flachs, "Design of Pipelined Processors for Optimal Implementation of Difference Equations," Proceedings of the Fourth ISMM International Conference on Parallel and Distributed Computing and Systems, Washington D.C., Vol. II, Oct. 1991.
132. Youssef and T. El-Ghazawi, "Fault Tolerant Routing in Product Networks," Proceedings of the Fourth ISMM International Conference on Parallel and Distributed Computing and Systems, Washington D.C., Vol. II, Oct. 1991.
133. W. E. Thompson, G. M. Flachs, L. Kazda, V. Kittur, and T. El-Ghazawi, "Vision System Control," Proceedings of 19TH Pittsburgh Conference on Modeling and Simulation, Pittsburgh, PA., May 1988.

134. Schleusener, T. El-Ghazawi, R. Black, and R. Blanco, "Analysis of Scanning Recognition Systems Using Windowed Clutter Measurements," Proceedings of the 29th Midwest Symposium on Circuits and Systems, Lincoln, Nebraska, Aug. 1986.
135. Schleusener, T. El-Ghazawi, R. Black, and R. Blanco, "Analog Windowed Clutter Instrumentation," Proceedings of ISE/IEEE Ideas in Science and Electronics, Albuquerque, New Mexico, May 1986.
136. El-Ghazawi and M. D. Merrill, "An Analytical Design of Digital Controllers with Minimum Settling Time," Proceedings of the 28th Midwest Symposium on Circuits and systems, Louisville, Kentucky, Aug. 1985.

Sample Conference Tutorials

1. Tarek El-Ghazawi. High-Performance Reconfigurable Computing: Architectures and Programming. DoD HPMP User Group Conference, Denver, June 2006.
2. T. El-Ghazawi, Steve Seidel and Phillip Merkey. Parallel Programming with UPC. IEEE/ACM Supercomputing, Seattle. November 2005.
3. T. El-Ghazawi, D. Buell, K. Gaj, and David Pointer. Reconfigurable Supercomputing, IEEE/ACM Supercomputing, Seattle. November 2005.
4. T. El-Ghazawi and W. Carlson. UPC: Unified Parallel C. IEEE/ACM Supercomputing, Pittsburgh. November 2004.
5. T. El-Ghazawi, D. Buell, M. B. Gokhale, and K. Gaj. Reconfigurable Supercomputing, IEEE/ACM Supercomputing, Pittsburgh. November 2004.
6. T. El-Ghazawi, UPC: Unified Parallel C at PACT 2004, Juan Les Pin. September 2004.
7. W. Carlson, T. El-Ghazawi, B. Numerich, and K. Yelick. Programming with the Partitioned Global Address Space Model: UPC, Co-Array Fortran, and Titanium at SIAM Parallel Processing Conference. San Francisco, February 2004.
8. Programming with the Partitioned Global Address Space Model: UPC, Co-Array Fortran, and Titanium at SC2003. Phoenix AZ, November 2003.
9. Reconfigurable Supercomputing, SC2003. Phoenix AZ, November 2003.
10. High-Performance Reconfigurable Computing, MAPLD2003. Washington DC, September 2003.
11. Programming in the Distributed Shared-memory Model, IPDPS'03, Nice FRANCE, April 2003.

12. UPC: Unified Parallel C at PACT 2003, New Orleans. September 2003.
13. T. El-Ghazawi, D. Buell, M. B. Gokhale, and A. Snavely. Reconfigurable Supercomputing, IEEE/ACM Supercomputing 2002, Baltimore, MD., Nov. 18, 2002
14. W. Carlson, T. El-Ghazawi, B. Numerich, and K. Yelick. Programming with the Distributed Shared-Memory Model, IEEE/ACM Supercomputing 2001. Denver, CO., Nov. 11, 2001

GRADUATE ADVISING:

Doctoral Students Advised

1. Dr. Abdullah Almojel: An Architecture-Independent Workload Characterization Model for Parallel Computer Architectures, GWU, April 1997.
(Dr. Almojel is the DEPUTY MINISTER OF EDUCATION in Saudi Arabia, and was the chair of the Computer Engineering Department at KFUPM, 2 journal papers and 3 conference papers)
2. Dr. Prachya Chalermwat: High-Performance Automatic Image Registration GMU, November 1999.
(Dr. Chalermwat is an Assistant Professor with the Computer Science Department at the Thai Royal Military Academy, 1 journal paper and 7 conference papers)
3. Dr. Nazil Goharian: A Sparse Matrix Approach for Information Retrieval, FIT, April 2001.
(Dr. Goharian is an Assistant Professor with the Computer Science Department at Illinois Institute of Technology, 3 conference papers)
4. Dr. Jearanai Vongsaard: Automatic Morphing Using Image Registration: Applications to Continuous Tracking of Radar Reflectivity and Rain Fields, GMU, April 2002.
(Dr. Vongsaard is an Assistant Professor with the Computer Science Department at the Thai Royal Military Academy, 5 conference papers)
5. Dr. Sinthop Kaewpijit: High-Performance Dimension Reduction of Hyperspectral Data, GMU, August 2002.
(Dr. Kaewpijit is an Army Major, Project Engineer/The Battalion of Engineers, Thailand, 2 journal paper and 6 conference papers)

M.S. Theses

1. John Harkins: Improving High-Performance Reconfigurable Architectures: A Sorting Case Study, December 2005 (two conference papers)

2. Smita Anareddy: Adaptive Programming-Model-Based Load-balancing Environment (APLE), GWU, January 2005 (1 conference paper)
3. Esam El-Araby: A System Level Design Life Cycle for Reconfigurable Computing Applications, GWU, January 2005 (1 journal paper, 4 conference papers)
4. Francios Cantonnet : Compiler Optimizations for Distributed Shared Memory Languages. GWU, December 2003 (1 journal paper , 3 conference papers)
5. Esmail Chitwala : Benchmarking of Reconfigurable Computing Systems. GWU, May 2004 (2 conference papers)

PROFESSIONAL SERVICE:

Editorial Duties:

- Guest Co-Editor, IEEE Computer, Special Issue on High-Performance Reconfigurable Systems (coming in 2007)
- Associate Editor, Int. Journal of Parallel and Distributed Systems and Networks, 98-01
- Guest Co-Editor, IEEE Concurrency, Track on High-Performance Data Mining, 99-00.

Government Research Funding Selection Panels:

- National Science Foundation, Distributed Computing Systems Panel, October 2005.
- DoD HPCMOD, Challenge Applications Panel, April 2004.
- NASA Headquarters, Applied Information Systems Review Panels (AISRP). December 2001.
- National Science Foundation, Science and Technology Centers (STC), Site Visit and Review Panel. October 2001.
- NASA Headquarters, ESS HPCC Program. February 2001.
- National Science Foundation, Information Technology Research (ITR), CISE. February 2000.

- NASA Headquarters, Applied Information Systems Review Panels (AISRP). November 1999.
- NASA GSFC, ESIP Program Tiger Review Team. June 1999.

Technical Conference Activities:

- Chair, Partitioned Global Address Space Programming Paradigms Conference (PGAS2006), Washington D.C., October 2006.
- Technical Program Committee Member, IEEE Field Programmable Technology (FPT), Bangkok, December 2006.
- Technical Program Committee Member, IEEE International Conference on Distributed Computing Systems (ICDCS), Lisbon, July 2006.
- Technical Program Committee Member, InfoScale 2006, International Conference on Scalable Information Systems. Hong Kong, May 2006.
- Technical Program Committee Member, IEEE Field Programmable Technology (FPT), Singapore, December 2005.
- Technical Program Committee Member, APPT'05: the 6th International Workshop on Advanced Parallel Processing Technologies, Hong Kong, China on Oct. 27-28, 2005.
- Technical Program Committee Member, IPDPS '2005, the IEEE/ACM International Parallel and Distributed Processing Symposium, Denver, April 2005.
- Technical Program Committee Member, IPDPS '2005 Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO), the IEEE/ACM International Parallel and Distributed Processing Symposium, Denver, April 2005.
- Program Committee of the Workshop on Language-Based Parallel Programming Models (WLPP) to be held in conjunction with the Sixth International Conference on Parallel Processing and Applied Mathematics (PPAM'2005)
- Technical Program Committee Member, IEEE Field Programmable Technology (FPT), Brisbane, Australia, December 2004.
- Technical Program Committee Member, Languages Runtimes'04, in conjunction with the 19th Annual ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications ACM, Vancouver, September 2004.

- Technical Program Committee Member, IPDPS '2004 Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO), the IEEE/ACM International Parallel and Distributed Processing Symposium, Santa Fe, April 2004.
- Technical Program Committee Member, IPDPS '2003 Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO), the IEEE/ACM 17th International Parallel and Distributed Processing Symposium, Nice, France, April 2003.
- Technical Program Committee, ACS/IEEE Conference International Conference on System and Applications, Tunisia, 2003.
- Technical Program Committee, ICPP02, International Conference on Parallel Processing, Toronto, September 2002.
- Technical Program Committee, The First International Workshop on Future Intelligent Earth Observing Satellite (FIEOS), April 2002.
- Session Chair: IEEE IPDPS02, Fort Lauderdale, April 2002.
- Technical Program Committee Member, IPDPS '2001, the IEEE/ACM 15th International Parallel and Distributed Processing Symposium, San Francisco, April 2001.
- Technical Program Committee Member, Cluster'2001, IEEE Cluster Computing Conference, San Diego, December 2001.
- Advisory Committee: International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN) (99-present)
- Advisory Board Member, IEEE task force on cluster computing (99-present)
- Session Chair, International Conference on the Applications of Artificial Intelligence. Cairo, February 2000.
- Session Chair, Workshop on Mining Scientific Datasets. Sponsored by the Army High-Performance Computing Research Center and Army Research Lab, U. of Minnesota. Minneapolis, September 1999.
- Session Chair, Workshop on Biologically Inspired Solutions for Parallel Processing. Sponsored by the IEEE, IEEECS. San Juan, April 1999.
- IEEE Aerospace'99, High-Performance Computing Applications in Aerospace Track Organizer, Aspen, Colorado, March 1999.

- On the steering committee of the international conference on Earth Observation and Environmental Information (EOEI), organized by international organizations
- Workshops co-chair for the EOEI'97, to be held in Alexandria, Egypt, October 1997.
- On the technical program committee of the Frontiers of the Massively Parallel Computation. Sponsored by the IEEE, IEEECS and NASA. Baltimore, MD, October 1996.
- Session Chair, Frontiers of Massively Parallel Computation. Sponsored by the IEEE, IEEECS and NASA. Baltimore, MD, October 1996.
- Workshops chair for the Frontiers of the Massively Parallel Computation. Sponsored by the IEEE, IEEECS and NASA. Mclean, VA, February 1995.
- On the technical program committee of the Frontiers of the Massively Parallel Computation. Sponsored by the IEEE, IEEECS and NASA. Mclean, VA, February 1995.
- On the steering committee for the International Conference on Parallel and Distributed Computing and Systems. Sponsored by ISCA in cooperation with IEEECS.
- On the technical program committee for the International Conference on Parallel and Distributed Computing and Systems. Sponsored by ISCA in cooperation with the IEEECS. Las Vegas, October 1994.
- On the technical committee for the International Conference on Reliability, Quality Control and Risk Assessment. Sponsored by IASTED in cooperation with the IEEE Reliability. November 1994.
- On the Technical Committee of the International Conference on Computer Applications in Design, Simulations, and Analysis. Sponsored by ISCA Washington D.C., March 1993.
- On the technical committee for the International Conference on Reliability, Quality Control and Risk Assessment. Sponsored by IASTED in cooperation with the IEEE Reliability. Boston, November 1993.
- Session Chairman in the Fifth ISMM International Conference on Parallel and Distributed Computing and Systems. Pittsburgh, October 1992.

- Local Arrangements Co-Chair for the International Conference on Reliability, Quality Control and Risk Assessment. Sponsored by IASTED in cooperation with the IEEE Reliability. Washington, D.C., November 1992.
- On the technical committee for the International Conference on Reliability, Quality Control and Risk Assessment. Sponsored by IASTED in cooperation with the IEEE Reliability. Washington, D.C., November 1992.
- Program Co-Chair for the Fourth ISMM International Conference on Parallel and Distributed Computing and Systems. Sponsored by the ISMM. Washington D.C., October 1991.

Technical Reviewing/Refereeing:

Served as a referee for textbooks and research papers in Parallel Processing and Computer Architecture for many organizations including:

- John Wiley
- West Publishing
- WCB Publishers
- The IEEE Transactions on Computers
- The IEEE Transactions on Parallel and Distributed Systems
- The IEEE Geosciences and Remote Sensing
- Journal of Parallel and Distributed Computing
- Journal of Computers and Software Engineering
- The Journal of Computers
- Many other publishers and IEEE/ACM major conferences
- Refereed research proposals submitted to NASA and NSF