**GITA ALAGHBAND**

Professor & Chair; Computer Science and Engineering Department
Director of CSIS PhD Program,
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**Education:**

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| 1986 | Ph.D. | Electrical Engineering, University of Colorado at Boulder |
| 1980 | M.S. | Computer Science, University of Colorado at Boulder |
| 1976 | B.S. | Physics |

**Professional Experience:**

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| ’09- | Chair, Department of Computer Science and Engineering, UCD |
| ’09- | Co-Director of CSIS PhD program, UCD |
| ‘07-‘09 | Interim Director of University Honors and Leadership (UHL), UCD (50% appointment) |
| ‘97- | Professor, Department of Computer Science and Engineering, UCD |
| ‘96-‘99 | Chair, Department of Computer Science and Engineering, UCD |
| ‘96 | Associate Professor, Department of Computer Science and Engineering, UCD |
| ‘92-‘94 | Assistant Professor, Department of Computer Science and Engineering, UCD |
| ‘87- ‘91 | Assistant Professor, Department of Electrical Engineering and Computer Science, UCD |
| ‘96 | Visiting Scientist: CERFACS, Toulouse, France |
| ‘87 | Assistant Professor: Rensselaer Polytechnic Institute, Troy, New York |
| ‘86 | Doctoral Research Associate, University of Colorado, Boulder |
| ‘85 | Research Fellow at ICASE, NASA Langley Research Center, Hampton, VA |

**Consultant:**

USWEST/QWEST (2000)

**Book:**

*Fundamentals of Parallel Processing*, Harry F. Jordan and Gita Alaghband, Prentice Hall, 2002, ISBN: 0-13-901158-7

**Solution Manual:**

**Instructor's Resource CD-ROM** , Harry F. Jordan, Gita Alaghband © 2003 | CD-ROM Only | ISBN: 0130334820 |

**Publications:**

91 papers and technical reports in national and international journals and conferences

**Recognitions, Honors:**

13 Honorary Tau Beta Pi Eminent Engineer
10-11 Academic Management Institute
06 Who's Who among America's Teachers (nominated by students)
05 Who's Who among America's Teachers (nominated by students)
02 Elected IEEE Computer Society Senior Member
01-02 University of Colorado Excellence in Leadership
02 Who's Who in Engineering Education (WWEE), 2002 Edition
99 21st Edition of Who's Who of American Women
97 Who's Who in Science and Engineering, 5th Edition
96 Who's Who among America's Teachers (nominated by students)
96 National Science Foundation Research Initiation Award
97 Faculty Fellowship Award, UCD
94 Outstanding Faculty Award, College of Engineering, UCD
92 Excellence in Teaching Award, UCD
90 First President's Junior Teaching Scholar Award

**Professional Organizations:**

IEEE Computer Society, Senior Member
Journal of Computer and Software Engineering, Member of Editorial Board ('96 – '2000)
Faculty advisor for Society of Women Engineers, 2003.

**Funded Projects:**

Over $2,088,000 grants on sponsored funding and research projects

**Biography:** Professor Gita Alaghband is the chair of the department, the co-director of the CSIS-PhD program and a senior member of IEEE Computer Society. She received her B.S. degree in Physics (1976), M.S. in Computer Science and Ph.D. in Electrical Engineering from University of Colorado at Boulder in 1980 and 1986 respectively.

She has been a visiting scientist at NASA, ICASE, a visiting professor at Rensselaer Polytechnic Institute, a visiting scientist at Centre European De Recherche Et De Formation Avancee Ec Calcul Scientifque, CERFACS, and a consultant with QWEST Information Technologies.

As the principle investigator on the NSF ReAch (Recruiting Engineers to ACHieve) grant, she maintained an active program where she mentored and provided scholarship and networking support for over 30 academically talented engineering undergraduate scholars majoring in the four disciplines in the College of Engineering and Applied Science. She works in partnership with many local industry representatives such as Oracle, Raytheon, Avaya, IBM, Microsoft with special interest in higher education to offer cutting edge programs at the CSE Department to enhance exposure between students and industry and the program. She is on the team of principle investigators recipient of nearly $1million NSF Bridge to Doctorate award. She was the Interim Director of the University Honors and Leadership (UHL) Program from February 07 to December 08. In this time period, she designed, developed, and implemented the UHL at UCD. She is a fellow of the University of Colorado's Excellence in Leadership Program.

Her research interests in parallel processing and distributed systems include application programs and

algorithm design, computer architectures, operating systems, performance evaluation, and simulation. Her work on sparse matrices has resulted in a new methodology for parallel solution of large sparse linear systems of equations on shared memory multiprocessors. She has been involved in the design of the Force parallel programming language for scientific high performance applications. Her work on temporal characterization of parallel program performance was funded by NSF Research Initiation Award. Her research and teaching experience have resulted in "*Fundamentals of Parallel Processing*" textbook published by Prentice Hall. Her most recent area of active research combines high performance computation with AI and machine learning applications of computer vision which focuses on real-time multi-human tracking systems with applications in autonomous vehicles, robotics, and surveillance; facial recognition and generation; optimization of learning rates of deep learning convolutional neural networks. Alaghband and her students have co-authored numerous research articles. Alaghband has developed the specialized Parallel Distributed Systems Lab, http://pds.ucdenver.edu where she teaches advanced graduate-level courses and advises several graduate and doctoral students' research projects. She has received a faculty fellowship and several teaching awards.

**Leadership and Professional Development Workshops:**

10-11 Academic Management Institute, nominated by N.Y. Chang, Interim Dean of College of Engineering, awarded by University of Colorado Denver.

Developing Your Personal Leadership Style, September 30-October 1, 2010 at the Antlers in Vail

Ivory Towers Internal and External Constituencies, October 29, 2010 at Red Rocks Community College

Strengthening your Softer Skills, December 3, 2010 at Metropolitan State College

Expanding Personal Power, January 27-28, 2011 at Lake Shore Lodge in Estes Park

04 "Negotiation," lead by Bernard Mayer, CDR Associates, President Hoffman's Emerging Leaders Program, University of Colorado, reunion workshop, Phipps Conference Center, Denver, CO October 22, 2004.

03 "Strategic Planning of Leadership," lead by Dr. Honan, Harvard Graduate School of Education, President Hoffman's Emerging Leaders Program, University of Colorado, reunion workshop, Phipps Conference Center, Denver, CO October 24, 03.

01-02 University of Colorado Emerging Leader (one year program 2001-2002)

Retreat with the Chancellors, Beaver Creak, Colorado, July 11-14, 2001
Political Savvy, Dr. Joel Deluca, Denver Campus, Sept. 21, 2001
Leadership: a Personal Perspective, President Hoffman, Koenig Alumni Center, Boulder, Co. Feb. 22, 2002
Federal and State Relations, Health and Sciences center, Nov. 2, 2001
Leadership without Easy Answers, Boulder Campus, April 5, 2002
Team Building, Colorado Springs Campus, April 30, 2002

99 Chairing the Academic Department, American Council of Education, San Diego, California, Feb. 17-20

98 Management Development Initiative Program, Leadership Development Retreat, Grant-Humphreys

Mansion, Denver, Colorado, Oct.30

94 College of Engineering Teaching Retreat, Executive Tower Inn, Denver, Colorado, September

94 Women Faculty Research Meeting, College of Engineering, UCD, June

93 Boot Camp for PROFS, Denver Colorado, Aug. 1-6

93 Sexual Harassment Seminar," UCD, Denver, Colorado, April

90-91 First President's Teaching Scholar (one-year program workshops, projects, and mentoring)
Retreat, Aspen Lodge, Estes Park, Co Jan. 12-13, 90

**Services at the University**

**University**

2016 Title IX Review Panel
2015 Academic Program Review School of Business, UCD (Team-member)
2009-10 College of Engineering Dean Search,
President Search Committee, (nominated by UCD Faculty Assembly, voted by Board of Regents, summer 2007 – 2008)
Advisory Board for UCD Faculty Diversity (Fall 2007 – 2012)
UCD Learning Taskforce (Summer 2007 – 2009)
Core Curriculum Oversight Committee (CCOC) (Spring 2007 – 2009)
Member of Search Committee for the new UHL Director, fall 2008
Privilege and Tenure Committee, (University P&T, fall 2006 – present)
University Honors and Leadership Faculty Steering Committee, Chair, (Feb. 2007 – 2009)
Retention, Tenure, Promotion Committee (University RTP, fall 2004- fall 2005)
Director of Undergraduate Education (DUE) Search Committee (Fall 2005)
Academic Master Planning, Rewards Committee, (Fall 2005 – 2009)
Academic Master Planning Search Conference (UCD) Oct. 14-15, 2004
Academic and Student Affairs Consolidation Study Group 2003-2004 (UCD)
University without Walls, Vision 2010
UCD Vision 2010, University without Walls, Co-Chair with Mark Gelernter (2004)
Quality Undergraduate Education (QUE) Steering Committee (Fall 2003 –2009)
College of Business RTP First Level Review Committee (2001 (8 cases) – 2002 (3 cases), 2010 (4 cases))
College of Arts & Media RTP Primary Unit (2004)
Budget Priority Committee (Emerging Leaders Project) (2001-2002)
Sexual Harassment Committee ('97 – 2012)
Reviewer of Four-campus System wide new Sexual Harassment policy (2001)
On-line Sexual Harassment Training review/evaluation (2001)
Department of Applied Mathematics Graduate Committee
Council of Chairs, Executive Committee Member
Developed the Lowry Academic Program in Computer Science.
Academic Instructional Technology
Search Committee, Office of Sponsored Programs

Faculty Assembly, Women's Issues
Department of Applied Mathematics Undergraduate Committee
University Research and Creative Committee
University Teaching Committee
Steering Committee for Academic Computing and Information Technology.
Academic Computing and Information Technology Retreat
First President's Teaching Scholars Program (1990)
College of Engineering Dean Search Committee (1990)
Member of CMG, Computational Math. Group,
Member of CCM, Center for Computational Math.,
Proposal Preparation Workshop

**College of Engineering and Applied Science**

NSF REACH (Recruiting Engineers to AChive) Steering Committee, Chair, 2006-2013)
Tapping Hidden Talents
(A program to motivate talented high school students to pursue higher education) 2003 - 2004
Computer Science Direction Committee
Computer Engineering/Curriculum Development Committee
Department of Electrical Engineering Search Committee
Adhoc Committee on Graduate and Research Programs
Extended Studies Committee
Teaching Enhancement Committee
Department of Civil Engineering Faculty Search Committee
College of Engineering RTP First Level Review Committee (Chair and member)
College of Engineering RTP Procedures Committee
Faculty Advisor for Society for Women Engineers (2003- 2004)

**Department (Computer Science and Engineering)**

ABET/CSAB Curriculum Design
Chair, Department of Computer Science and Engineering
CSE Advisory Board (established 2012; regular meetings)
New BA in CS degree program (2019)
New BS-CS Curriculum Design for 2018 ABET/CAC Program Criteria
ABET/CSAB Self-Study and preparation for accreditation visit (2010; 2016)
Lawrence Street Center's New CSE Space Design and Planning (2011-2012)
2010-2015 Strategic Planning for CSE Department
PhD Preliminary Exams
Equipment Committee (chair & member)
Executive Committee
Grievance Committee (chair& member)
Research Committee (chair& member)
Graduate Committee (chair)
On-Line Frequently Asked Questions (FAQ) to help with student advising for students:
Undergraduate committee

Faculty Search Committee
RTP Committee (Primary Unit)
Bylaws Committee
Graduate Advisor
Established Parallel Distributed Systems (PDS) Lab http://pds.ucdenver.edu
Established Experimental Research Laboratory (funding acquired from Student Program Fees Award & Grant from Sun Micro Systems) 2005.
Faculty Advisor to Women in Computer Science (WICS, 2018-2019)

**Other Professional Activities**

NSF Review Panel (invited): October 18-19, 2012, III Informatics CAREER Award Proposals, NSF Staff II room 565, 4201 Wilson Blvd., Arlington, VA 22230
NSF Review Panel (invited): April 3-4, 2012, Biogenome Informatics SM12-SS Proposals, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230
NSF Review Panel: (S-STEM), Arlington, VA 22202, September 30-October 3, 2008, November 4-6, 2009, September 26-28, 2010.
Moderator, National Collegiate Honors Council (NCHC) 2007 Annual Conference
Santa Clara University, External Reviewer for RTP 2005
Metro State Computer Science Advisory Board, 2005
Member of the Technical Committee on Parallel and Distributed Computing & Systems, The International Association of Science and Technology for Development (IASTED), Invited, (2001-2004)
Meeting Organizer, "Parallel Processing Constructs for High Level Programming Languages, The ANSI Standards Committee X3H5," Hotel Boulderado, June 26-28, 1991
Reviewer for Journal of Supercomputing,
Reviewer for Parallel Computing.
Reviewer for Journal of Computers & Mathematics with Applications,
Reviewer for IEEE SMC, (2004- 2005)
Reviewer for IEEE Transactions on Software Engineering.
Reviewer for IEEE Transactions on Education.
Reviewer for the International Conference on Parallel Processing.
Reviewer for the International Parallel Processing Symposium.
Reviewer for COMPAR Conference.
Reviewer for Workshop on Mobile Wireless Networks
Reviewer for NSF Proposals.
Session Chair, 1989 International Conference on Parallel Processing.
Member of CMG, Computational Math Group, UCD.
Member of CSDG, Computer System Design Group, UCB.
Member of PARLAN, Parallel Language Research Group, UCB.
Science Fair Judge (2000- 2004)
Science Sponsor for Girl Scouts, 2001,
Invited IEEE panelist for Senior Member Application Qualification Review, Sept. 28, 2002,

**Funded Projects:**

2020 Colorado Department of Human Services /COLO, "Cytotoxic Edema to Determine Etiology and

Prognosis of Pediatric Traumatic Brain Injury," Co-PI: Gita Alaghband ($100,000); PI: Daniel Lindberg, Emergency Medicine, School of Medicine

2000 Presidential Initiative Seed Grant, "Integrated Solar Energy for Sustainable, Resilient, and Equitable Communities," Serena Kim, PhD (PI) School of Public Affairs, CU Denver, Koushik Ganesan, PhD Candidate Physics, CU Boulder, Henok Ghebrechristos, PhD Candidate Computer Science & Engineering, CU Denver, William Swann, PhD School of Public Affairs, CU Denver, Gita Alaghband, PhD Computer Science & Engineering, CU Denver

2016 Vantiv: $25,000 Pilot Peer Mentoring Program

2015 Big Data Systems and Engineering Proposal to Nexenta (Industry): $50,000 to launch the Computer Storage Systems course

13-15 National Science Foundation, University of Colorado Denver CO-AMP Bridge to the Doctorate, PI: Barry Shur with four STEM management team: Allen, Brenda; Santorico, Stephanie; DeGregori, James; Alaghband, Gita; Martinez, Dominic F (This is processed by OGC), $ 987,000

07-11 UCD Matching Funds for Engineers to ACHieve (REACH), $25,383.03, 4/19/2007 - 9/16/2011.

06-11 National Science Foundation, Recruiting Engineers to ACHieve (REACH), $499,527.00
CO-PIs: Larry Armenta and Nien-Yin Chang, 09/15/06 - 9/16/2011.

05 Experimental System Laboratory, $9,938.00, Student Program Fee Award, College of Engineering, UCD

05 Sun Micro Systems, Matching Grant for Experimental System Laboratory, $9,641.76.

99 IT Grant for Computer Science Laboratory, $ 125,000, UCD.

98 SITFAC Grant, $13,000, UCD.

97 SITFACT Grant, $17,500, UCD.

97 Omnis Software Incorporation, Software Engineering Clinic," $115,250, Wolfe and Alaghband.

95 University of Colorado at Denver: Faculty Seed Money, $405.

94 Faculty Grant Award, "Performance Characterization of Scalable parallel Programs and Architectures," $2900.

94 University of Colorado at Denver: Faculty Seed Money, $500.

93-96 Research Initiation Grant, National Science Foundation, NSF: "Parametric Modeling Tools for Performance Prediction of Parallel Programs," July 15, 93 to December 31, 1996, $94,008.

93 University of Colorado at Denver: Faculty Seed Money, $400.

90-91 Cray Research and NCAR, "Parallel Performance Tool," with Harry F. Jordan, Supercomputing time on Cray YMP computer.

91-01 Cray Research and NCAR, Supercomputing.

1989 Center for Software System Sciences, University of Colorado at Boulder, "Multiprocessor System," with H. F. Jordan $16,337.

1987 University of Colorado at Denver: Faculty Seed Money, $300.

1987 AMOCO: Junior Faculty Research Development Award, $20,000.

1987 National Science Foundation: "Slow Coherency Analysis of Inter Area Dynamics in Large Power Systems,"
with Joe H. Chow, $76,000.

**Student Advising**

Theses Supervisions (four Ph.D., 29 Masters, 44 Projects)
Member of Theses Committee (18 Ph.D.s, 40 Masters)
Default advisor for all new PhD students (as director of CSIS PhD Program)

**Improvement of Undergraduate and Graduate Education**
Development of "Parallel and Distributed Laboratory" http://PDS.ucdenver.edu (2009-present); the lab has been funded by Program Fee from College of Engineering. This lab is being developed to be used with the following courses: CSCI 5551/75551 Parallel and Distributed Systems, CSCI 5593 Advanced Computer Architectures, CSCI 5573 Operating Systems, CSCI 5574/7574 and CSCI 5552/7552 Advanced Topics in Parallel Processing.

Revision and implementation of the undergraduate BS-CSE curriculum as Chair of CSE Department in collaboration with the CSE faculty (2009-2011).

Development and implementation of new core CSE courses with collaboration from industry part-time faculty: CSCI 1510 Logic design (lecture/lab course), CSCI 2132 Circuits and Electronics, CSCI 3511 Hardware-Software Interface (lecture/lab course), CSCI 4728 Embedded Systems Programming(lecture/lab course)

Revision of Computer Science and Information Systems PhD (CSIS) curriculum as Co-Director of CSIS PhD program in collaboration with CSE faculty (2009- 2011).

Developed and implemented a college-level summer Pre-collegiate course "ENGR 1208 Topics in Engineering" offered during summers 2007-2013 (in collaboration with NY Chang). The course consists of two five-week long projects: Software Game Automata and Earthquake Science.

Interim Director of University Honors and Leadership Program (UHL), Spring 2007 – December 2008:

> Developed a unique two-track (academic honors and leadership) interdisciplinary undergraduate program new in Colorado that provides an intellectual laboratory for educational innovations for faculty and students. Source of funding: Office of Undergraduate Experiences and Office of Provost.

Developed and offered UHL Seminar, UHL 2577, weekly invited speakers, weekly newsletters generated by UHL students: http://carbon.cudenver.edu/csprojects/UHL2755/Organization/UHL%20Seminar%20Schedule.html

Principle Investigator of the five-year National Science Foundation, ReACH consisting of three main components:

(1) A pre-collegiate summer program designed for high school juniors and seniors interested in the engineering disciplines
(2) Scholarships that will provide up to $7,600 the first year for full-time students enrolled in the College of Engineering who demonstrate financial need, academic achievement, and the commitment to pursue a career in Science, Technology, Engineering, or Mathematics (STEM).
(3) A network of academic and social support that will help REACH Scholars to achieve a high level of academic success, complete their baccalaureate in a timely manner, and pursue career and educational opportunities in the field.

Quality Undergraduate Education (QUE) Steering Committee (Fall 2003 –Present)

UCD Campus Core Curriculum Development
UCD Honor's Program
UCD Freshman Seminar
UCD Advising and Outreach Programs
Creation of Director of Undergraduate Education position
Director of Undergraduate Education (DUE) Search Committee (Fall 2005)

19th International Conference on "The First-Year Experience", July 24-27, 2006, Toronto, Ontario, Canada

Experimental Computer Systems Laboratory (Funded by College of Engineering and Sun Micro Systems) 2005

Developed an On-Line senior-level Computer Architecture Course (Funded by Colorado Institute of Technology, CIT).

Chaired Computer Science and Engineering Department, doubled student enrollment through program offering and new advising strategies, 1996-1999.

Science Fair Judge, Southern Hills Middle School and Bixby Elementary School (six years).

**Publications (Detailed list)**
**Book:**
*Fundamentals of Parallel Processing*, Harry F. Jordan and Gita Alaghband, Prentice Hall, 2002.

**Solution Manual:**
**Instructor's Resource CD-ROM** , Harry F. Jordan, Gita Alaghband © 2003 | CD-ROM Only | ISBN: 0130334820 |

**Published Articles:**
Manh Huynh, Alaghband, G., "GPRAR: Graph Convolutional Network based Pose Reconstruction and Action Recognition for Human Trajectory Prediction," arXiv preprint arXiv:2103.14113 (2021).

Takano, N., Alaghband, G., "Generator From Edges: Reconstruction of Facial Images," 15th International

Symposium on Visual Computing (ISVC'20), pp. 430-443, October 4-7, 2020, virtual.

Manh, H., Alaghband, G., "AOL: Adaptive Online Learning for Human Trajectory Prediction in Dynamic Video Scenes," The British Machine Vision Conference (BMVC '20), pp.1-12, September 7-10, 2020, virtual.

Ghebrechristos, H., Alaghband, G. Deep curriculum learning optimization. SN COMPUT. SCI. 1, 245 (2020). https://doi.org/10.1007/s42979-020-00251-7

Alghamdi, T., Alaghband, G., "A Novel CC*CNN Model for Face Recognition using Edge," 14th International Conference on Information Technology and Applications (ICITA 2020), pp. 549-553, June 5 - 6, 2020, San Francisco, USA; IRC Best Paper Award.

Ghebrechristos, H.E, Alaghband, G., "Information Theory-Based Curriculum Learning Factory to Optimize Training," In: Palaiahnakote S., Sanniti di Baja G., Wang L., Yan W. (eds) Pattern Recognition. ACPR 2019. Lecture Notes in Computer Science, vol. 12046. Springer, Cham. https://doi.org/10.1007/978-3-030-41404-7_29, pp. 409-423, 26-29 November 2019, Auckland, New Zealand.

Ghebrechristos, H.E, Alaghband, G., "Optimizing Training using Information Theory-Based Curriculum Learning Factory," 31st International Conference on Tools with Artificial Intelligence (ICTAI 2019), November 4-6, 2019, Portland, Oregon.

Alghamdi, T., Alaghband, G., "High Performance Parallel Sort for Shared and Distributed Memory MIMD," 16th International Conference in Applied Computing (AC'2019), pp. 130-139 ,November 7-9, 2019, Cagliari, Italy.

Manh, H., Alaghband, G., "Trajectory Prediction by Coupling Scene-LSTM with Human Movement LSTM," In: Bebis G. et al. (eds) Advances in Visual Computing. ISVC 2019. Lecture Notes in Computer Science, vol 11844, pp. 244-259, Springer, Cham. https://doi.org/10.1007/978-3-030-33720-9_19, Lake Tahoe, Nevada

Manh, H., Alaghband, G., "Scene-LSTM: A Model for Human Trajectory Prediction," arXiv:1808.04018 [cs.CV], April 2019.

Takano, N., Alaghband, G., "SRGAN: What the neural network learns," The 23rd International Conference on Image Processing, Computer Vision,& Pattern Recognition (*IPCV'19*) pp. 29-35, July 29 - August 1, 2019, USA.

Ghebrechristos, H.E, Alaghband, G., "Expediting Training Using Information Theory-Based Patch Ordering Algorithm," International Conference on Computational Science and Computational Intelligence (CSCI'18), pp. 1161-1168, December 13-15, 2018, Las Vegas, USA.

Linck, I., Alaghband, G., "Test Zonal Search based on Region Label (TZSR) for Motion Estimation in HEVC," (MMSP 2018) 2018 IEEE 20th International Workshop on Multimedia Signal Processing, August 29-31, 2018, Vancouver, BC, 2018, pp. 1-6, doi: 10.1109/MMSP.2018.8547127.

Manh, H., Alaghband, G., "Spatiotemporal KSVD Dictionary Learning for Online Multi-target Tracking," Proceedings of the 15th Computer and Robot Vision (CRV 2018), pp. 150-157, May 9-11, 2018, Toronto, Ontario, CA. doi: 10.1109/CRV.2018.00030

Gnabasik, D., Alaghband, G., "A Data-driven Biomarker Computational Model for Lung Disease Classification," Proceedings of the 10th International Conference on Bioinformatics and Computational Biology (BICOB 2018), March 19–21, 2018, pp. 58-63, Las Vegas, USA.

Ghebrechristos, H.E, Alaghband, G., "RetiNet - Feature Extractor for Learning Patterns of Diabetic Retinopathy and Age-Related Macular Degeneration from Publicly Available Datasets," Health Informatics and Medical Systems (CSCI-ISHI) in International Conference on Computational Science and Computational Intelligence (CSCI'17), December 14-16, 2017, Las Vegas, USA.

Simonton, T., Alaghband, G., "Efficient and Accurate Word2Vec Implementations in GPU and Shared-Memory Multicore Architectures," 2017 IEEE High Performance Extreme Computing Conference (HPEC '17), Waltham, MA USA, 12 - 14 September 2017, pp. 1-7.
http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8091076

Alaghband, G., Fardi, H. Z., "Parallel Programming Multi-core Computers," Proceedings of the 2016 STEM Education Hawaii University International Conferences on Science,
http://www.huichawaii.org/steam2016.html , Honolulu, Hawaii, June 10-12, 2016 pp.1-11.
http://www.huichawaii.org/assets/alaghband%2c-gita---2016-steam-huic.pdf

Vu, L., Alaghband, G., "A Load Balancing Parallel Method for Frequent Pattern Mining on Multi-core Cluster," Proceedings of HPC Symposium, 2015 Spring Simulation Multi-Conference (SpringSim'15), Simulation Series, pp. 49-59, in Vol. 47, No. 4, April 12-15, 2015, Alexandria, Virginia, USA.

Vu, L., Alaghband, G., "A Self-Adaptive Method for Frequent Pattern Mining using a CPU-GPU Hybrid Model," Proceedings of HPC Symposium, 2015 Spring Simulation Multi-Conference (SpringSim'15), Simulation Series, pp. 192-202 in Vol. 47, No. 4, April 12-15, 2015, Alexandria, Virginia, USA.

Vu, L., Alaghband, G., "Novel parallel method for association rule mining on multi-core shared memory systems," Parallel Computing, Volume 40, Issue 10, December 2014, Pages 768–785. (Special Section on 2013 Workshop on Data Intensive Scalable Computing Systems (DISCS-2013) edited by Dr. Philip C. Roth and Dr. Yong Chen, doi:10.1016/j.parco.2014.08.003,
http://www.sciencedirect.com/science/article/pii/S0167819114001124

Vu, L., Alaghband, G., "Efficient Algorithms for Mining Frequent Patterns from Sparse and Dense Databases," Journal of Intelligent Systems, ISSN (Online ahead of print) 2191-026X, ISSN (Print) 0334-1860, DOI: 10.1515/jisys-2014-0040, September 2014, pp.181-197 in Vol. 24, Issue 2, March/April 2015.

Kern, D., and Alaghband, G., "Parallel Processing of Irregular Workloads on the GPGPU: Adaptive Quadrature," Proceedings of the PDPTA'14: The 2014 International Conference on Parallel and Distributed Processing Techniques and Applications, Vol. 2, pp. 423-429, July 21-24, 2014, Las Vegas, Nevada, USA, http://worldcomp-proceedings.com/proc/proc2014/pdpta.html, http://worldcomp-proceedings.com/proc/p2014/PDP.htmlpp.

Fardi, H., Pace, S., Alaghband, G., "A Semiconductor Device Simulator Utilizing MATLAB," Proceedings of the 2014 Hawaii University International Conferences on Science, Technology, Engineering, Math and Education, http://www.huichawaii.org/steam2014p.html , Honolulu, Hawaii, June 16-18, 2014 pp1-10.
http://www.huichawaii.org/assets/fardi_hamid_-_et_al_stem_2014.pdf

Fardi, H., Alaghband, G., "Assessment Strategies for Student Recruitment and Retention in Engineering," Global Science and Technology Forum (GSTF), Journal on Education (JED), Vol. 2, No. 1. pp. 74-80, June 2014. *dl6.globalstf.org/index.php/**jed**/article/download/686/693*

Gnabasik, D., Alaghband, G., "Discrete Time Evolution of Proteomic Biomarkers," Proceedings of the CSCI 2014, International Conference on Computational Science and Computational Intelligence, Las Vegas, Nevada, USA, Vol. 2, pp. 11-16, March 10-13, 2014.
http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6820887 ,
http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6822296

Vu, L., Alaghband, G. "An Efficient Approach for Mining Association Rules from Sparse and Dense Databases" Proceedings of the International Conference on Information and Knowledge Management 2014 (ICIKM'2014), World Congress on Computer and Information Systems 2014 (WCCAIS'2014), January 17-19, pp. 1-8, Hammamet, Tunisia. 10.1109/WCCAIS.2014.6916550,
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&tp=&arnumber=6916550

Vu, L.; Alaghband, G., "Novel Parallel Method for Mining Frequent Patterns on Multi-core Shared Memory Systems," in Proc. of the ACM 2013 Int. Workshop on Data-Intensive Scalable Computing Systems, Supercomputing 2013, Nov 2013, pp. 49-54, Denver, Colorado. http://dl.acm.org/citation.cfm?id=2534653

Aydin, A. A.; Alaghband, G., "Sequential & Parallel Hybrid Approach for Non-Recursive Most Significant Digit Radix Sort," Proceedings of the IADIS Applied Computing 2013, October 23-25, 2013, pp. 51-59, Fort Worth, Texas.

Mohammed, M.; Alaghband, G., "An Improved Parallel Eight Direction Prewitt Edge Detection Algorithm," Proceedings of the 17th International Conference on Image Processing, Computer Vision, & Pattern Recognition, WorldComp' 13, pp. 852-860, July 22-25, 2013, Las Vegas, Nevada.

Vu, L.; Alaghband, G., "Mining Frequent Patterns Based on Data Characteristics," Proceedings of the 2012 International Conference on Information & Knowledge Engineering, in-print, WorldComp' 12, July 16-19, 2012, pp. 369-376, Las Vegas, Nevada.

Gnabasik, D.; Alaghband, G., "Proteomic Data Analysis: a Topological Approach," Proceedings of the 2012 International Conference on Bioinformatics and Computational Biology BIOCOMP, in-print, WorldComp' 12, July 16-19, 2012, Las Vegas, Nevada.

Vu, L.; Alaghband, G., "High Performance Frequent Pattern Mining on Multi-core Cluster," IEEE Proceedings of the 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), pp. 630- 633, May 21-25, 2012, Denver, Colorado.

Gnabasik, D.; Alaghband, G., "Topological Analysis of Proteomic Data," IEEE Proceedings of the 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), pp. 634- 635, May 21-25, 2012, Denver, Colorado.

Vu, L.; Alaghband, G., "A Fast Algorithm Combining FP-Tree and TID-List for Frequent Pattern Mining," Proceedings of the 2011 International Conference on Information & Knowledge Engineering, pp. 472-477, WorldComp' 11, July 18-21, 2011, Las Vegas, Nevada.

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Stefan Muszala , Alaghband Gita, James Hack and Dan Connors, "Natural Load Indices (NLI) in NAMD2 load balancing algorithms ," PARA 2008: 9th International Workshop on State-of-the-Art in Scientific and Parallel Computing, May 13-16,2008, NTNU, Trondheim, Norway.
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Alaghband, G., Gnabasik, D., "Streaming Java Applications to Mobile Computing Devices," The 2004 International Conference on Wireless Networks ,ICWN'04: June 21-24, 2004, Las Vegas, Nevada, USA.

Fardi, H. Z., Alaghband, G., "Simulation of Hot Electron Effect in Negative Electron Affinity GaN pn junction," Proceedings of SPIE-The International Society of Optical Engineering, Vol. 4646, San Jose, CA, January 20-25, 2002.

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Alaghband, G., Jordan, H. F., "Overview of The Force Scientific Parallel Language," Scientific Programming, Vol. 3, pp. 33-47, 1994.

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Sixth SIAM Conference in Parallel Processing, Norfolk, Virginia, pp. 992-995, March 93.

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Alaghband, G., "On the Performance of a Parallel Technique For Solving Large Sparse Linear Systems," Proceedings of the NASECODE VII, The Seventh International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits," Copper Mountain, Colorado, pp. 140-142, April 8-12, 1991.

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Wolfe, J.W., Mathis, W.D., Anderson, C., Rothman, J., Gottler, M., Brady, G., Walker, R., Duane, G., Alaghband, G., "K-Winner Networks" IEEE Transactions On Neural Networks, Vol. 2, No. 2, pp. 310-315, Jan. 91.

Alaghband, G., "Issues in Parallel Data Access; An Alternative Approach," Fifth SIAM Conference on Parallel Processing for Scientific Computing, Houston, TX, March 25-27, 1991.

Wolfe, W.J., Mathis, D.W., Rothman, J., Alaghband, G., Gottler, M., "K-winner networks using interactive activation," Proceedings of the 1990 SPIE's Advances in Intelligent Robotics Systems, November 4-9, 1990.

Alaghband, G., Jordan, H.F., "Sparse Gaussian Elimination with Controlled Fill-in on a Shared Memory Multiprocessor," IEEE Transactions on Computers, Vol. 38, No. 11, pp. 1539-1557, Nov. 89.

Alaghband, G., "Parallel Pivoting Combined With Parallel Reduction," Parallel Computing Journal, 11, pp. 201-221, Nov. 89.

Wolfe, W.J., Alaghband, G., Mathis, D.W., "The Fusion of Voice and Video," Proceedings of the 1989 SPIE's Advances in Intelligent Robotics Systems, November 7-10, 1989.

Wolfe, W.J., Alaghband, G., Mathis, D.W., Baxter, A., "Applications of the Connection Machine to Computer Vision," Proceedings of the 1989 SPIE's Advances in Intelligent Robotics Systems, November 7-10, 1989.

Alaghband, G., Slifka, A., Kim, Y., "Comparison of Two parallel Solution Techniques in Sparse Linear Systems," SIAM Conference on Parallel Processing, Chicago, Illinois, Dec. 89.

Jordan, H.F., Benten, M.S., Alaghband, G., R. Jakob, "The Force: A Highly Portable Parallel Programming Language, "Proceedings of the 1989 International Conference on Parallel Processing, Vol. 2, pp. 112-117,

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Alaghband, G., "A Parallel Pivoting Algorithm on a Shared Memory Multiprocessor With Controlled Fill-in," Proceedings of the 1988 International Conference on Parallel Processing, pp. 177-180, Aug. 88.

Alaghband, G., "Multiprocessor Sparse LU Decomposition with Controlled Fill-in," Ph.D. Thesis, Department of Electrical and Computer Engineering, University of Colorado, Boulder, May 86.

Alaghband, G., Jordan, H.F., "Parallelization of the MA28 Sparse Matrix Package for the HEP," SIAM Conference on Parallel Processing for Scientific Computing, November 7-11, 1983.

Rodriguez, B., Jordan, H., Alaghband, G., "Temporal Characterization of the Scalability of Data Movement," Technical Report TR-49, Department of Computer Science and Engineering, University of Colorado at Denver, August 8, 1995.

Rodriguez, B., Jordan, H., Alaghband, G., "Characterizing the Scalability of Parallel Programs and Architectures," Technical Report TR-39, Department of Computer Science and Engineering, University of Colorado at Denver, Jan. 94.

Alaghband, G., Mah, J., "Software Tools for Parallel Processing the Force," Technical Report TR-21, Department of Computer Science and Engineering, University of Colorado at Denver, Oct. 92.

Alaghband, G., Bisque, C., "Initialization, Failure Detection, Routing, Mutual Exclusion and Election Algorithms for Hypercube Networks," Technical Report TR-22, Department of Computer Science and Engineering, University of Colorado at Denver, Oct. 92.

Alaghband, G., Jordan H. F., "The Force, A Language for Programming Shared Memory Multiprocessors," Technical Report TR-23, Department of Computer Science and Engineering, University of Colorado at Denver, Oct. 92.

Reindel, M.S., Alaghband, G., "NADA- A Non-Imperative Yet Practical High-Level Programming Language," Technical Report TR-10, Department of Computer Science and Engineering, University of Colorado at Denver, Jan. 92.

Alaghband, G., "Issues in Parallel Data Access; An Alternative Approach," Report CSDG 90-4, Computer System Design Group, Electrical and Computer Engineering Department, University of Colorado, Boulder, Dec. 90. A short version was later presented in the Fifth SIAM Conference on Parallel Processing for Scientific Computing.

Jordan, H.F., Schnabel, R.B., Alaghband, G., Parallel Language Research Group,
"2nd Comment on the Language Definition of PCF Fortran - Draft 2", letter to the Parallel Computing Forum**,** Bruce Leasure, Executive Director, 1906 Fox Drive, Champaign, IL 61820, Jan. 90.

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Alaghband, G., "Parallel Pivoting Combined With Parallel Reduction," ICASE Report NO. 87-75, NASA

Langley Research Center, Hampton, VA, Dec. 87. A full version was later published in the Parallel Computing Journal.

Alaghband, G., Jordan, H.F., "Sparse Gaussian Elimination with Controlled Fill-in on a Shared Memory Multiprocessor," Report CSDG 86-4, Computer System Design Group, Electrical and Computer Engineering Dept., University of Colorado, Boulder, Nov. 86. A full version was later published in the IEEE Transactions on Computers.

Alaghband, G., Jordan, H.F., "Multiprocessor Sparse L/U Decomposition with Controlled Fill-in," ICASE Report No. 85-48, NASA Langley Research Center, Hampton, Virginia 23665, Oct. 85.

Alaghband, G., "Study of Parallelization of SPICE 2G.6 on an MIMD Computer," Report CSDG 84-3, Computer System Design Group, Electrical and Computer Engineering Department, University of Colorado, Boulder, Sept. 84.

Alaghband, G., Jordan, H.F., "Parallelization of the MA28 Sparse Matrix package for the HEP," Report CSDG 83-3, Computer System Design Group, Electrical and Computer Engineering Department, University of Colorado, Boulder, June 83.

**Presentations at Meetings or Seminar Presentations**

Sept. 3, 2015: Invited Panelist at Nexenta Open SDX Summit 2015/VMWare:
Panel-III: New-Tech Collaboration

Panelists: Gita Alaghband, Head of CS, CU Denver ; Paul McClure, CTO Cloud Services, CommVault ; Oneal Bhambani, President, Flywheel ; Martin Hoerhammer, CEO, Medialine; Alex Freedland, Chairman/COO, Mirantis ; Duncan Logan, CEO, RocketSpace ; Terry Vahey, CIO, SJSU ; Mehmet Ali Kayaoğlu, GM, SoftTech ; Don Clegg, CMO, Supermicro ; Arvind Soni, Head of Products/VIO, VMware

June 10 "Recruiting Students in Engineering: Assessment Strategies and Retention,", Assessed Institutional Initiatives, International Conference on The First-Year Experience, June 7-10, 2010, Maui, Hawaii.

Aydin, Ahmet Arif, Alaghband Gita, " Performance benchmarking of sequential, parallel and hybrid RADIX SORT algorithms And analyzing impact of sub vectors, created on each level, on hybrid MSD Radix sort's runtime ," Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 2012.

Gnabasik David, Alaghband Gita, "Model-Driven Proteomic Biomarker Discovery - Incorporating Prior Experimental Data," Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 2012.

Vu Lan, Alaghband Gita, "Novel methods for mining frequent patterns and their applications, "Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 2012.

Vu Lan, Alaghband Gita, "High Performance Human Gene Prediction using Gene Ontology," Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 30,

2010.

Gnabasik David, Alaghband Gita, “Model-Driven Proteomic Biomarker Discovery -Incorporating Prior Experimental Data,” Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 30, 2010.

Sunhwa, Jung, Alaghband, Gita, “Parallel Collision Resolution Using Spatial Subdivision,” Research and Creative Activities Symposium (RaCAS), University of Colorado Denver, Anschutz Medical Campus, April 30, 2010.

Nov. 02 "Invited Panelist on Supercomputing 2002, “*Are Designer Supercomputers an Endangered Species?*” Friday, November 22 8:30–10:00am, November 16-22, 2002, Baltimore, Maryland.
Moderator: Aruna Ramanan, IBM
Panelists: Thomas Sterling (Center for Advanced Computing Research, California Institute of Technology & Jet Propulsion Laboratory);
Gita Alaghband (University of Colorado, Denver);
Jamshed Mirza (IBM Corporation);
Tadaski Watanabe (NEC Corporation);
Candace Culhane (NSA)

Jan. 01 "Parallel Computing with Shared Memory Multiprocessors," MACS Colloquium, (invited speaker), Colorado School of Mines, Golden, Colorado.

Nov. 00 "Temporal Characterization of Parallel Program Performance," MACS Colloquium, (invited speaker), Colorado School of Mines, Golden, Colorado.

Aug. 00 “Relationship Model Among Technology Areas”, (81 pages) QWEST Information Technologies, Denver, Colorado.

Feb. 99 Conference on Leadership “Academic Chairs,” San Diego California.

Oct. 98 “Performance Prediction and Modeling of Parallel Programs,” UCD/UCB Joint Math Seminar.

Sept. 96 “Performance Prediction of Parallel Programs,” Department of Mathematics and Computer Science, Denver University.

June 96 “Temporal Characterization of Data Movement Demand To Predict Performance of Parallel Programs,” CERFACS, Toulouse, France.

Oct. 95 “Parallel Solution of Large Sparse Linear Systems of Equations,” Department of Mathematics and Computer Science, Colorado School of Mines, Golden, Colorado.

Sept. 94 “Dossier Preparation for Non-tenured Faculty,” College of Engineering, University of Colorado at Denver.

Nov. 92 “Performance of Parallel Loops,” Computer Science Seminars, University of Colorado at Denver.

Oct. 92 "Programming Shared Memory Multiprocessors," Electrical Engineering Seminars, University of Colorado at Denver.

Mar. 92 "The Force Parallel Language," Computer Science Seminars, University of Colorado at Denver.

Feb. 92 "A Parallel Algorithm for the Solution of Sparse Matrices," Computer Science Seminars, University of Colorado at Denver.

April 91 "On the Performance of a Parallel Technique For Solving Large Sparse Linear Systems," NASECODE VII, The Seventh International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits," Copper Mountain, CO.

March 91 "Issues in Parallel Data Access; An Alternative Approach," Fifth SIAM Conference on Parallel Processing for Scientific Computing, Houston, TX.

Nov. 90 "Vector Computers," Parallel Computing Seminar, Computational Mathematics, University of Colorado at Denver.

Dec. 89 "Comparison of Two Parallel Solution Techniques in Sparse Linear Systems," SIAM Conference on Parallel Processing, Chicago, Illinois.

Feb. 89 "Design of a Parallel Application Package for the Solution of Large Sparse Linear Systems of Equations," Computer System Design Group, Electrical and Computer Engineering Department, University of Colorado at Boulder.

Jan. 89 "Hiding vs. Minimizing Latency in Shared Memory Multiprocessors," Lecture in Future of Supercomputers, ECEN 7903, Doctoral level seminar, Electrical and Computer Engineering Department, University of Colorado at Boulder.

Sep. 88 "PCF: Parallel Concurrent Fortran," Parallel Language Research Group, University of Colorado, Boulder.

Feb. 88 "Design of Parallel Algorithms for the Solution of Large Sparse Linear Systems," Center for Applied Parallel Processing, CAPP, University of Colorado, Boulder.

Feb. 88 "Parallel Sparse Solvers," Computational Math Group, CMG, University of Colorado at Denver.

Dec. 87 "A Multiple Processor Sparse Linear System Solver," Supercomputer Seminar, Advanced System Technology, INC. Denver.

Sep. 87 "Parallelization of SPICE: A Circuit Simulation Package," Computer Science Seminars, University of Colorado at Denver.

May 87 "Parallel Sparse Solvers," Computer Science Seminars, Rensselaer Polytechnic Institute.

April 87 "Parallel Solution of Sparse matrices on Shared Memory Multiprocessors," (Invited Seminar), University of Colorado at Denver.

Nov. 86 "Multiprocessor Sparse LU Decomposition with Controlled fill-in," (Invited Seminar), Rensselaer Polytechnic Institute.

Nov. 86 "A Parallel Solution Technique for Large Sparse Systems of Equations," (Invited Seminar), Colorado School of Mines, Golden, Colorado.

Nov. 86 "Multiprocessor Sparse LU Decomposition with Controlled fill-in," (Invited Seminar), The University of Rhode Island.

May. 86 "Multiprocessor Sparse LU Decomposition with Controlled fill-in," (Invited Seminar), Institute for Information Technology, George Mason University.

Feb. 86 "Multiprocessor Sparse LU Decomposition with Controlled fill-in," (Invited Seminar), University of Maryland, Baltimore.

June 85 "Parallel Sparse Matrix Solvers, ICASE, Institute for Computer Applications in Science and Engineering, NASA Langley Research Center, Hampton, Virginia.

Nov. 83 "Parallelization of the MA28 Sparse Matrix Package for the HEP," SIAM Conference on Parallel Processing, Norfolk, Virginia.

**Conferences Attended**

Feb.08 "2008 Student Success Workshop" presented by Dr. Watson Scott Swail, President & CEO, The Educational Policy Institute, www.educationalpolicy.org, February 8, 2008, in Denver, CO.

Nov. 07 National Collegiate Honors Council (NCHC) 2007 Annual Conference, Hyatt Regency Denver at Colorado Convention Center, Denver, CO. Oct, 31 – Nov. 4, 2007

Oct. 07 3rd Annual Undergraduate Experience Symposium2007, Undergraduate Experiences Symposium: Undergraduate Research, Internships and Experiential learning, Speakers: Eugene Alpert, Lynne Montrose, Mary Crowe, St. Cajetan, UCD, Denver, CO. Oct. 4-5, 2007.

Oct. 06 Annual First-Year Experience Symposium, John Gardner, National Resource Center for the First-Year Experience and Students in Transition., 2006 UCD.

July 06 The 20th International Conference on The First-Year Experience, Toronto Marriott Downtown Eaton Centre, Toronto, Canada, July 24-27, 2006

Sept. 05 Symposium of the Undergraduate Experience, Richard Light, (UCD) Sept. 23, 2005

March 05 CU Women Succeeding, Faculty Development Symposium, Denver, CO, March 4, 2005

Oct. 04 Academic Master Planning Search Conference (UCD) Oct. 14-15, 2004

April 03 Gender and Information Technology Symposium, University of Colorado, Tivoli, Denver, Colorado.

Nov. 01 New Hampshare Budget Model, John Griffith, UCD.

Jan. 00 SPIE Conference on Optoelectronics, San Jose, California.

June 96 "International Linear Algebra Year, ILAY Workshop," Toulouse, France.

Sept. 94 "College of Engineering Teaching Retreat," Executive Tower Inn, Denver, Colorado.

June 94 "Women Faculty Research Meeting,' College of Engineering, UCD.

April 94 "Carnegie Mellon Engineering Curriculum Presentation," College of Engineering, UCD.

April 93 "An Evening with Women in Engineering," Women Engineering Society, SWE, Denver, Colorado.

April 93 "KSR1 Architecture," Steve Frank, University of Colorado, Boulder.

Jan. 93 "A Bit Serial, Stored Program Optical Computer," H. F. Jordan, University of Colorado, Boulder.

Jan. 93 "JD Edwards," Denver, Colorado.

Oct. 92 "IBM Power Series Supercomputers," NOAA, Boulder, Colorado.

Sept. 92 "Tera Supercomputer," Burton Smith, NCAR, Boulder, Colorado.

June 91 "Parallel Processing Constructs for High Level Programming Languages, The ANSI Standards Committee X3H5," Boulder, Colorado.

Oct. 87 "SIAM 35-th Anniversary Meeting, Conference on Parallel Processing," Denver, Colorado.

Sep. 87 "Intel Hypercube Parallel Processing Conference," Golden, Colorado.

Oct. 85 "Alternative Technologies for Class VI Computing," Golden, Colorado.

**Teaching**

**Graduate**

Parallel and Distributed Systems
Parallel Computation and Architectures
Advanced Topics in Parallel Processing
Advanced Computer Architectures
Operating Systems
Advanced Operating Systems
Established Parallel and Distributed Systems Laboratory (2009-present)
Established Experimental Research Laboratory 2005.

**Undergraduate**

Operating Systems
Computer Architecture (designed and offered On-Line 2002)
Computer Architecture (regular classroom offering)
Senior Software Design Projects
Microprocessor Design Laboratory