

Michael R. Lightner

University of Colorado
College of Engineering and Applied Science
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Boulder, CO 80309-0425

Senior Engineering Consultant, Coleman Institute for Cognitive Disabilities, July 2002 – 2004
Associate Executive Director, Coleman Institute for Cognitive Disabilities, March 2001 – July 2002
Interim Director, Coleman Institute for Cognitive Disabilities, February 2001

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Present position:

Chair, Department of Electrical and Computer Engineering, 2006- Present
Professor (by courtesy), Department of Computer Science
Professor (joint appointment), Department of Rehabilitation Medicine, UCHSC
Co-Director of the RERC-ACT NIDRR-funded Research Center
Co-Director b l u r r lab - Digital Innovation Lab
Fellow, Univ. of Colorado Center for the Integrative Study of Work

Education:

Ph.D. in Electrical Engineering from Carnegie-Mellon University, 1979
M.S Electrical Engineering from the University of Florida, 1974
B.S. with high honors Electrical Engineering from University of Florida, 1972

Professional Experience:

University of Colorado System

University of Colorado, Boulder

- Associate Dean for Special Projects, College of Engineering, 2000 - 2001
- Associate Dean for Academic Affairs, College of Engineering, 1997 - 2000
- Professor, Electrical and Computer Engineering July 1989 - present.
- Associate Professor, Electrical and Computer Engineering, September 1983 - 1989
- Assistant Professor - Electrical Engineering September 1981 - 1983
- AT&T Bell Labs, Murray Hill, New Jersey, September 1987 - August 1988 (sabbatical year)
- Summer Faculty, Mathematical Sciences Department, IBM Watson Research Center, 1982.
- Assistant Professor - Electrical Engineering - University of Illinois, August 1979 -81
- Research Assistant Professor - Coordinated Science Laboratory, August 1979 - 1981.

Awards:

- IEEE CAS Society Golden Jubilee Medal, 2000
- IEEE CAS Society the Third Millennium Medal , 2000
Elected IEEE Fellow, 1997
- College of Engineering Max S. Peters Faculty Service Award, 1997
- Received the inaugural John and Mercedes Peebles Innovation in Teaching Award, 1996
- Received the College of Engineering Hutchinson Award for Outstanding Teaching, 1995
- Distinguished Service Award from IEEE for Serving as Editor of IEEE Transactions on Computer-aided Design
- Received Best Paper Award at the 1989 Hawaii International Conference on System Sciences for "The Boulder Optimal Logic Design System, co-authored by G. Hachtel, M. Lightner, K. Bartlett, D. Bostick, R. Jacoby, P. Moceyunas, C. Morrison, X. Du, E. Schwarz.
- Received AEA Outstanding Researcher Educator Award for 1987 by the Mountain States Council of the American Electronics Association.
- 1983 NSF Presidential Young Investigator
- Listed in Who's Who in Technology Today.

Department Service – Only Major Activities

- Director of Graduate Studies, Department of ECE, 1989-92
- Department Chair, 2006-present
- PRP Committee, 2003
- ABET Committee, 2003
- Department Executive Committee, 2003-05

College Service – Only Major Activities

- Associate Dean for Academic Affairs, 1997-2000
- Associate Dean for Special Projects, 2000-2001
- Acting Associate Dean for Research, 1994
- Review committee for ITP PhD Program, 1993
- College 2020 Strategic Planning, 2008-09

Campus Service – Only Major Activities

- VCAA search committee, 2008
- Flagship 2030 Research Excellence Implementation Committee, 2008
- FTEP, Presentations on PowerPoint, 2007-08
- FTEP, advisory board and co-Director Summer Institute, 1996-present
- Dean of Business School Personnel Advisory Committee, 2005-09

- Dean of College of Music Personnel Advisory Committee, 2005-09
- A&S Dean ad hoc advisory committee, 2005
- IT exploratory committee, (has new name) 2000-01
- BCPC, member 1999-present with two year hiatus, chair in 2001
- Member, Boulder Faculty Assembly, in mid-90's
- CRCW 1992 -93

University Service

- Chair Privilege and Tenure Committee, 1995-97
- Member, Privilege and Tenure Committee, 1993-97
- System committee to form the Coleman Institute for Cognitive Disabilities 1999-2000
- Chair, Advisory committee Institute for BioEnergetics, headquartered on Colorado Springs Campus, 2002-04

Professional Service

- Member ABET (professional accreditation body) Board of Directors 2008-2010
- Member IEEE ad hoc on Financial Equity, 2009
- Member IEEE Publications and Products Board, 2009
- Member IEEE Publications Strategic Planning Committee, 2009
- Member IEEE Publications Finance Committee, 2009
- Member IEEE Publications Operations Committee, 2009
- Vice Chair for Strategy IEEE Committee on Earth Observations
- General co-Chair, New IEEE-IBM Conference on Accessibility, 2008-09
- Chair, IEEE Ad hoc Committee to develop a new membership model, 2007-2009
- Chair, IEEE Nominations and Appointments Committee, 2008
- Member, IEEE Nominations and Appointments Committee 2000-1, 2007, 2009
- Chair, IEEE Infrastructure Oversight Committee, 2007
- Member IEEE Infrastructure Oversight Committee, 2006
- Member IEEE Board of Directors, 1998-99, 2002-07
- Past President, IEEE, 2007
- President, IEEE, 2006
- Chair, IEEE Executive Compensation Committee, 2006
- Member, IEEE Executive Compensation Committee, 2005
- President-Elect IEEE 2005
- Member, IEEE Executive Director Search Committee, 2005
- Member, IEEE Strategic Planning Committee, 2003-05
- Member, IEEE New Initiatives Committee, 2004-05, Chair 2005
- IEEE Vice President for Publication Services and Products Board – 2003, 2004
- IEEE Vice President for Technical Activities, 2002, also duties and VP-Elect and Past VP
- Chair IEEE TAB Products Committee 2000 - 2001
- Vice Chair IEEE TAB Society Presidents' Forum Chair 2001

- Member IEEE TAB Finance Committee 2000 - 2001
- Division Director I, IEEE, 1998, 1999
- Member IEEE Tab Management Committee 1997-99
- Member of the IEEE Audit Committee, 1997-99
- Member, IEEE GOLD Committee, 1997-99
- Member of the IEEE Products Committee 1999-01
- Executive Committee, IEEE Design Automation Conference, 1997-99
- Past President, IEEE Circuits and Systems Society, 1997
- President, IEEE Circuits and Systems Society, 1996
- Member IEEE Tab Management Committee 1997-99
- President-Elect, IEEE Circuits and Systems Society, 1995
- Vice President, Technical Activities IEEE Circuits and Systems Society, 1991-93
- General Chairperson, 1993 International Conference on Computer Aided Design.
- Technical Program Chairperson, 1992 International Conference on Computer Aided Design.
- Technical Committee of the European Design Automation Conference, 1993
- Technical Program Chair of IEEE VLSI Winter Workshop, 1992, 1993
- Technical Committee of Winter Simulation Meeting, 1992
- Chair, IEEE Technical Committee on Computer-Aided Network Design (CANDE) 1987-89
- Secretary Treasurer, IEEE Technical Committee on Computer-Aided Network Design (CANDE) 1985-87
- Member Technical Program Committee 1984-1988 International Conference on Computer Aided Design.
- Member, Administrative Committee (AdComm) of the IEEE Circuits and Systems Society 1984-87.
- Chaired sessions at each ICCAD 1984-1988
- Member International Organizing Committee 1984 European Simulation Meeting.
- Member of Technical Program Committee, 1987 International Logic Synthesis Workshop
- Member of Technical Program Committee, 1989 International Behavioral Synthesis Workshop
- Presented invited tutorial on Modeling and Simulation at 1989 and 1988 Custom Integrated Circuits Conferences
- Chair for Special Session on Logical Design for VLSI, 1982 ISCAS, April 1982.
- Chair and Organizer for Special Session on Applications of Optimization to Circuit Design, 1981 ISCAS, April 1981.

Editorial Service

- Series Associate Editor on new ACM Journal Transactions on Electrical Design Automation Editor Oxford University Press
- Member ad hoc ACM/SIGMA Committee to found an electronic journal on CAD (TODAES)
- Editor, IEEE Transactions on Computer Aided Design, June 1989-June 1991.
- Associate Editor, IEEE Transactions on Computer Aided Design, June 1986-1989
- Associate Editor, IEEE Circuits and Devices Magazine, 1986-1989
- Series Editor, Saunders Publishing Company - Series in Computer Engineering

- Member Editorial Board of CAD/CAM Abstracts - Bowers Publishing.
- Series Editor, Holt, Rinehart and Winston - Series in Computer Engineering
- Member Editorial Board of CAD/CAM Abstracts - Bowers Publishing.

Additional Service

- Member of Board and Secretary, Arts and Humanities Assembly of Boulder County, 1993-95. Now Boulder County Arts Alliance
- President and founding board member of the Baroque Chamber Orchestra of Colorado, 2005-09

Selected Presentations

For IEEE

- Presentation on ABET accreditation at first all China Engineering Accreditation Workshop, Beijing, China 2008
- Presentation on Future Challenges in Electrical Engineering Education to the 100th Anniversary of Electrical Engineering Education in China Conference, Xi'an, China, 2008
- Plenary Presentation to the IEEE Board Series on Alternate Member Models, Feb, June, Nov, 2008
- Presentation, Assistive Technology: An Emerging Discipline given at the following locations in 2007-08. Quito, Ecuador, Lima, Peru, Xi'an, China, Harbin, China, Chengdu, China, Beijing China
- Presentation, Assistive Technology: An Emerging Discipline at Weizmann Institute, Israel 12/5/06
- Presentation Assistive Technology: An Emerging Discipline at Andescon conference in Quito, Ecuador 11/3/06
- Presentation Assistive Technology: An Emerging Discipline, engineering workshop HangZhou, China 10/11/06
- Presentation Assistive Technology: An Emerging Discipline, University of South Africa, Johannesburg, 9/22/06
- Presentation Assistive Technology: An Emerging Discipline, to the engineering students at the University of Pretoria, South Africa, 9/18/06

- Presentation Assistive Technology: An Emerging Discipline, Royal Society of Edinburgh, Scotland, 8/28/06
- Presentation Assistive Technology: An Emerging Discipline, Engineering Student Congress in Lima, Peru, 8/10/06
- Presentation Assistive Technology: An Emerging Discipline, Asia-Pacific Student Congress in Beijing, China 7/16/06
- Presentation Assistive Technology: An Emerging Discipline, Technology and Family Conference in Dubai, UAE, 7/05/06
- Presentation Assistive Technology: An Emerging Discipline, Popov Society in Moscow, Russia 5/19/06
- Presentation Assistive Technology: An Emerging Discipline, Engineering in Medicine and Biology Society Chapter in Denver, Colorado, 5/04/06
- Presentation Assistive Technology: An Emerging Discipline, India Institute of Technology, Delhi, India, 4/27/06
- Presentation Assistive Technology: An Emerging Discipline, India Institute of Science in Bangalore, India, 4/26/06
- Presentation Assistive Technology: An Emerging Discipline, IEEE members in Thailand, 3/25/06
- Presentation Assistive Technology: An Emerging Discipline, IEEE members in Brazil, 3/10/06
- Presentation Assistive Technology: An Emerging Discipline, Hong Kong Section of IEEE, 1/10/06
- Presentation at AAMR annual meeting, June 2002 – “Awareness as the Unifying Metaphor of Current Caregiver Practice and Advances in Technology”

Selected Other Presentations

- Keynote speaker, IEEE Asia Pacific Circuits and Systems Society, Seoul, Korea December 1996
- Presented talk at the SASIMI Conference, Japan, December 1996
- Invited talk at Osaka University, Osaka Japan, December, 1996
- Invited talk at the University of Hong Kong, April, 1996
- Paper presented at the Frontiers in Education Conference “A Paperless Laboratory for Circuits and Electronics” November 1996

- Presented talk on Validating and Synthesizing Behavioral VHDL Descriptions to research group of Matsushita Electrical in Osaka, Japan, August 1995
- Presented talk on Validating and Synthesizing Behavioral VHDL Descriptions to research Fujitsu Semiconductor, Japan, August 1995
- Presented lecture on "Relationships between semantic models of concurrent systems and parallel Digital Simulation" Computer Science Department, University of Leiden, Leiden, The Netherlands, 1995
- Invited panelist on Future Research Directions for Circuits and Systems at 1989 ISCAS
- Invited talk at Quinhua University, Beijing, China
- Invited talk at 1st International Conference on Semiconductor Processing and Design, Beijing, China
- Invited Participant at the NATO Advanced Study Institute on Computer Design Aids for VLSI Circuits, Urbino, Italy, July 1980.

Publications:

- Lightner, M.R.; Erdogmus, D.; 'Signal processing challenges in cognitive assistive technology [Exploratory DSP] ', Signal Processing Magazine, IEEE Volume 25, Issue 5, September 2008 Page(s):103 – 108
- Griesbach, J.D.; Lightner, M.R.; Etter, D.M.; 'Mean square error analysis of nonuniform subband adaptive filters for system modeling ', Signal Processing, IEEE Transactions on [see also Acoustics, Speech, and Signal Processing, IEEE Transactions on] Volume 53, Issue 2, Part 1, Feb 2005 Page(s):550 - 563
- Griesbach, J.D.; Lightner, M.R.; Etter, D.M.; 'Constituent subband allocation for system modeling nonuniform subband adaptive filters ', Signal Processing, IEEE Transactions on [see also Acoustics, Speech, and Signal Processing, IEEE Transactions on] Volume 53, Issue 2, Part 1, Feb 2005 Page(s):539 – 549
- " Data Sonification for Detection of Digital Communication Signals in Low SNR Settings", Prof. M. Lightner, K. Arehart, R. Muelheisen, S. Johnson, J. Greisbach, in preparation.
- J.D. Griesbach, M. Lightner, D. Etter, "Subband Adaptive Filtering Decimation Constraints for Oversampled Non-Uniform Filterbanks", IEEE Transactions on Circuits and Systems II, 2002, vol. 49, no. 10, pp. 677-681
- J.D. Griesbach, M. Lightner, D. Etter, "Subband MMSE Bounds for Filterbank Adaptation in Non-Uniform System Modeling Subband Adaptive Filters", ICASSP-01: IEEE International Conference on Acoustics, Speech, and Signal Processing, 2001, vol. 6, pp. 3709-3712

- J.D. Griesbach, M. Lightner, "Rationally Decimated Constituent-Based Filterbanks for Subband Adaptive Filters", 33rd Asilomar Conference on Signals, Systems, and Computers, 1999, vol. 2, pp. 908-911
- J.D. Griesbach, M. Lightner, D. Etter, "Spectral Domain (MMSE) Estimators for Non-Uniform System Modeling Subband Adaptive Filters", 34th Asilomar Conference on Signals, Systems, and Computers, 2000, vol. 2, pp. 1489-1493
- "Subband Adaptive Filtering Decimation Constraints for Oversampled Non-uniform Filterbanks", J. D. Griesbach, M. Lightner, and D. M. Etter to appear, IEEE Transactions on Circuits and Systems II – 2003.
- "Virtual Circuit Laboratory", Hess Hodge, H. Scott Hinton, Michael R. Lightner ASEE Journal of Engineering Education, October 2001
- "A Technology-Enhanced Learning Environment for a Graduate/Undergraduate Course on Optical Fiber Communications," H. Scott Hinton, Roberto Gonzalez, Laura L. Tedder, Sandeep Karandikar, Harpreet Behl, Paul C. Smith, John Wilbanks, James Humphrey, Murray Gordon, Michael R. Lightner, ASEE Journal of Engineering Education, October 2001
- "The See-Through Building" As an Educational Tool" , Proceedings of the IEEE Special Issue on Electrical and Computer Engineering Education January 2000.
- "Spectral Domain MMSE Estimators for Non-Uniform System Modeling Subband Adaptive Filters," Jacob D. Griesbach, Michael Lightner, and Delores M. Etter in 34th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, October 29-1, 2000. IEEE.
- "Rationally Decimated Constituent-Based Filterbanks for Subband Adaptive Filters," Jacob D. Griesbach, Michael Lightner, and Delores M. Etter in 34th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, October 29-1, 2000. IEEE. Originally published in 33rd Asilomar Conference on Signals, Systems, and Computers, 1999
- "Validating Behavioral VHDL Descriptions" A. Alkar and M. Lightner submitted to ACM Transactions on Design Automation of Electronic Systems - in revision
- "The Influence of Two Level Optimization on the Area and Routability of FSMs Embedded in Lookup Table FPGAs" Proceedings of the 1995 International Workshop on Logic Synthesis, May 1995
- "Behavioral Validation of VHDL" Proceedings of 1995 Sasimi Conference, Nara, Japan, August, 1995. A. Alkar and M. Lightner
- "Technology Independent Estimation of Area and Delay in Logic Synthesis" Q. GI, Y.-S. Oh, M. R. Lightner, and F. Somenzi. In SASIMI '92 pages 171-180, Kyoto, Japan, April, 1992.

- "Program Restructuring and Parallel Extraction of VHDL for Parallel Simulation, pp. 81-87, B. Vellandi and M. Lightner, Proceedings of 1992 European Design Automation Conference, Brussels March 16, 1992.
- "Periodic Don't Cares and Sequential Synthesis", D. Bostick and M. Lightner Proceedings of the 1991 MCNC Logic Synthesis Workshop.
- Sazegari, R. Byrd, M. Lightner, "Fast Algorithms for Best Real Rational Approximations," in SIAM Conference on Optimization, April 1989.
- W. G. Bliss and M. R. Lightner, "The Reliability of Large Arrays for Matrix Multiplication with Algorithm-Based Fault-Tolerance," 3rd Workshop on Wafer-scale Integration, co-sponsored by AICA, AEI (Milano), Como, Italy, June 8, 1989.
- M. R. Lightner and S. W. Director, "Multiple Criterion Optimization for Electronic Circuits," IEEE Trans. on Circuits and Systems, Vol. CAS-28, pp. 169-179, Mar. 1981.
- D. E. Hocevar, M. R. Lightner, and T. N. Trick, "An Extrapolated Yield Approximation Technique for Use in Yield Maximization," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Volume CAD-3, Number 4, pp. 279-287, October 1984.
- M. R. Lightner, G. D. Hachtel, R. H. Byrd, M. H. Heydemann, "A Theory and Algorithmic Frame for Switch Level Simulation," Simulation in Research and Development, A. Javor (ed.), Elsevier Science Publishers B.V., (North-Holland).
- "Technology Independent Estimation of Area and Delay in Logic Synthesis" Q. Ji, Y.-S. Oh, M.R. Lightner, and F. Somenzi. In SASIMI '92 pages 171-180, Kyoto, Japan, April, 1992.
- "Program Restructuring and Parallel Extraction of VHDL for Parallel Simulation, pp. 81-87, B. Vellandi and M. Lightner, Proceedings of 1992 European Design Automation Conference, Brussels March 16, 1992.
- "Periodic Don't Cares and Sequential Synthesis", D. Bostick and M. Lightner Proceedings of the 1991 MCNC Logic Synthesis Workshop.
- "Technology Independent Estimation of Area and Delay in Logic Synthesis" Q. Ji, Y.-S. Oh, M.R. Lightner, and F. Somenzi. In SASIMI '92 pages 171-180, Kyoto, Japan, April, 1992.
- "Technology Independent Estimation of Area and Delay in Logic Synthesis" Q. Ji, Y.S. Oh, M. Lightner and F. Somenzi, to appear in Proceedings of Sasimi Conference, April 1992, Kobe, Japan.

- W. G. Bliss and M. R. Lightner, "The Reliability of Large Arrays for Matrix Multiplication with Algorithm-Based Fault-Tolerance," 3rd Workshop on Wafer-scale Integration, co-sponsored by AICA, AEI (Milano), Como, Italy, June 8, 1989
- G. Colon-Bonet, E. M. Schwarz, D. G. Bostick, G. D. Hachtel, M. R. Lightner, "On Optimal Extraction of Combinational Logic and Don't Care Sets from Hardware Description Languages," IEEE International Conference on Computer-Aided Design, November 6-9, 1989.
- G. D. Hachtel, M. R. Lightner, and H.J. Kelly, "Application of the Optimization Program AOP to the Design of Memory Circuits," IEEE Trans. Circuits and Systems, Vol. CAS-22, No. 6, June 1975.
- S. W. Director, A. W. Westerberg, and M. R. Lightner, "Simulation Procedures for Large Scale Electronics Systems," (Invited Paper) Journal of the Institution of Electronic and Telecommunication Engineers, Vol. 24, No. 7, pp. 271-285, July 1978.
- S. N. Tulukdar, M. R. Lightner, and R. L. Koo, "Multiobjective Optimization Procedures for Power System Problems," Proc. Of IEEE Power Engineering Society Summer Meeting, Vancouver, British Columbia, Canada, July 15-20, 1979.
- M. R. Lightner and S. W. Director, "Multiple Criterion Optimization for Electronic Circuits," IEEE Trans. on Circuits and Systems, Vol. CAS-28, pp. 169-179, Mar. 1981.
- M. R. Lightner and S. W. Director, "Multiple Criterion Optimization with Yield Maximization," IEEE Trans. Circuits and Systems, Vol. CAS-28, no. 8, pp. 781-790, Aug. 1981.
- G. Cortelazzo, M. R. Lightner, and W. K. Jenkins, "An Alternate Technique for Min-Max Design of Multiband Finite Impulse Response Digital Filters," Journal of Circuits, Systems, Signal Processing, Vol. 2, no. 3, 1983.
- D. E. Hocevar, M. R. Lightner, and T. N. Trick, "An Extrapolated Yield Approximation Technique for Use in Yield Maximization," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Volume CAD-3, Number 4, pp. 279-287, October 1984.
- D. E. Hocevar, M. R. Lightner, and T. N. Trick, "A Study of Variance Reduction Techniques for Estimating Circuit Yield," Vol. CAD-2, no. 3, IEEE Trans. on CAD of Integrated Circuits and Systems, pp. 180-191, July 1983.
- G. Cortelazzo and M. R. Lightner, "Simultaneous Design in Both Magnitude and Group-Delay of IIR and FIR Filters Based on Multiple Criterion Optimization," IEEE Transactions on Acoustics, Speech, and Signal Processing, Volume ASSP-32, No. 5, October 1984, pp 949-967.
- G. Cortelazzo and M. R. Lightner, "The Use of Multiple Criterion Optimization for Frequency Domain Design of Non Causal IIR Filters," IEEE Trans. on Acoustics, Speech and Signal Processing, February 1985, Vol. ASSP-33, Vol. 1, no. 1, pp. 126-135.

- G. Cortelazzo and M. R. Lightner, "On the Design of Digital Filters with Monotonic Transition Regions Using 'Don't Care' Bands," Transactions of Illinois Academy of Sciences, Volume 77, 3 and 4, 1984, pp. 261-270.
- R. Byrd, G. D. Hachtel, and M. R. Lightner, "Switch Level Simulation, Part I: Theory and Algorithmic Frame," submitted to IEEE Transactions on Computer Aided Design.
- G. D. Hachtel, M. R. Lightner, M. R. Faucher, M. H. Heydemann, "Switch Level Simulation, Part II: Bottleneck Shortest Path Algorithm," submitted to IEEE Transactions on Computer Aided Design.
- M. R. Lightner, "Modeling and Simulating VLSI Digital Systems - A Tutorial," Proceedings of the IEEE, Volume 75, No. 6, June 1987, pp. 786-796.

Books and Book Chapters:

- M. R. Lightner, The RF and Microwave Handbook, "Time Domain Computer-Aided Circuit Simulation" edited by Mike Golio, CRC Press November 2000
- S. W. Director and M. R. Lightner, "Computer-Aided Design" Section 27 of Electronics Engineers' Handbook, Second Edition, McGraw-Hill 1982.
- R. Byrd, G. D. Hachtel, M. R. Lightner and M. Heydemann, "Switch Level Simulation-Models: Theory and Algorithms," pp 1-70 in "Computer-Aided Design," edited by A. Sangiovanni-Vincentelli, Jai Press.

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Conference Publications

- "The Influence of Two Level Optimization on the Area and Routability of FSMs Embedded in Lookup Table FPGAs" Proceedings of the 1995 International Workshop on Logic Synthesis, May 1995
- M. R. Lightner and S. W. Director, "Yield Maximization and Multiple Criteria Optimization of Electronic Circuits," (invited presentation), Proceedings of 1978 Midwest Circuit Theory Symposium, August 1978.
- M. R. Lightner and S. W. Director, "Multiple Criterion Optimization of Electronic Circuits," Proceedings of IEE Int. Conf. on Computer Aided Design and Manufacture of Electronic Components, Circuits and Systems, Univ. of Sussex, England, July 1979.
- M. R. Lightner and S. W. Director, "Yield Maximization for Use in Multiple Criterion Optimization of Electronic Circuits," Proceedings 1979 IEEE Int. Sym. on Circuits and Systems, Tokyo, Japan, July 1979.

- M. R. Lightner, P. Yang, and C. Pahlmeyer, "Piecewise Nonlinear Analysis of Electronic Circuits," Proceedings of International Conference on Circuits and Computers, pp. 804-807, Port Chester, New York, October 1980.
- G. Cortelazzo, M. R. Lightner, and W. K. Jenkins, "Frequency Domain Design of Multiband FIR Digital Filters Based on the Minimax Criterion," 1981 Inter. Symp. on Cir. and Systems, Chicago, Illinois, April 1981.
- M. R. Lightner and C. L. Pahlmeyer, "Models and Algorithms to Speed DC Convergence in Bipolar Circuits," 24th Midwest Symposium on Circuits and Systems, June 29-30, 1981, Albuquerque, New Mexico, pp. 269-273.
- M. R. Lightner and G. Cortelazzo, "Multiple Objective Design of Digital Filters," 1982 IEEE International Conference on Acoustics, Speech, and Signal Processing, Paris, May 1982.
- M. R. Lightner and G. D. Hachtel, "Implication Algorithms for MOS Switch Level Functional Macromodeling, Extraction and Testing," 1982 Design Automation Conference, June 1982.
- M.R. Lightner G. D. Hachtel, "MOS Switch Level Simulation Macromodeling and Testing," invited paper 1982 IEEE Inter. Symp. on Circuits and Systems, May 1982.
- V. Rao, T. N. Trick, and M. R. Lightner, "Hazard Detection in a Multiple Delay Logic Simulator," 1982 Inter. Symp. on Circuits and Systems, May 1982.
- M. Heydemann, G. D. Hachtel, and M. R. Lightner, "Implementation Issues in Multiple Delay Switch Level Simulation," invited paper 1982 International Conference on Circuits and Computers, New York, NY, Sept. 1982.
- D. Hocevar, M. R. Lightner and T. Trick, "A Study of Variance Reduction Techniques for Estimating Circuit Yields," Proceedings of 1983 IEEE International Symposium on Circuits and Systems, May 1983.
- D. Hocevar, M. R. Lightner and T. Trick, "Monte Carlo Based Yield Maximization with a Quadratic Model," Proceedings of the 1983 IEEE International Symposium on Circuits and Systems, May 1983.
- G. Cortelazzo and M. R. Lightner, "Simultaneous Design in Both Magnitude and Group-Delay of IIR and FIR Filters: Problems and Results," Proceedings of the 1983 IEEE International Conference on Acoustics, Speech and Signal Processing, May 1983.
- V. Pulges and M. R. Lightner, "Recursive Bipartitioning PLA Placement and Layout," 1984 International Conference on Computer Design.
- Z. L. Mo and M. R. Lightner, "A Two Parameter Delay Model for Switch Level Simulation," 1984 International Conference on Computer Design.
- C. T. Bye, M. R. Lightner and D. L. Ravenscroft, "A Functional Modeling and Simulation Environment based on ESIM and C," 1984 International Conference on Computer Aided Design.
- D. E. Hocevar, M. R. Lightner, T. N. Trick, "An Extrapolated Yield Approximation Techniques for Yield Maximization," Fifth International Symposium on Network Theory, September 1984, Sarajevo, Yugoslavia

- M.R. Lightner, G. D. Hachtel, R. H. Byrd, M. H. Heydemann, "A Theory and Algorithmic Frame for Switch Level Simulation," Simulation in Research and Development, A. Javor (ed.), Elsevier Science Publishers B.V., (North-Holland).
- M. R. Lightner, H. P. Mueller, B. Vellandi and H. Vellandi, "CSIM: The Evolution of a Behavioral Level Simulator from a Functional Simulator: Implementation Issues and Performance Measurements," Proceedings of 1985 ICCAD, Nov. 1985, Santa Clara, CA.
- W. Bliss, J. Girard, J. Avery, M. Lightner, and L. Scharf, "A Modular Architecture for Dynamic Programming and Maximum Likelihood Sequence Estimation," Proceedings 1986 ICASSP, April 1986, pp. 357-360
- D. L. Ravenscroft and M. R. Lightner, "Functional Language Extractor and Boolean Cover Generator," IEEE International Conference on Computer Aided Design, November 11-13, 1986, Santa Clara, California, pp. 120-123.
- F. Lombardi, M. R. Lightner, and W. K. Huang, "A Prediction and Fitting Method for Evaluating the Fault Coverage of Combinational Circuits Using Random Testing," Proceedings International Test Conference, 1987.
- D. Bostick, G. D. Hachtel, R. Jacoby, M.R. Lightner, P. Moceyunas, C. R. Morrison, D. Ravenscroft, "The Boulder Optimal Logic Design System," Proceedings of 1987 ICCAD.
- W. Bliss and M. R. Lightner, "The Design of Fault Tolerant Arrays of Integer Arithmetic Multipliers," Proceedings of 1987 ICCAD
- G. D. Hachtel and M. R. Lightner, "Don't Care Conditions in Top Down Synthesis," Proceedings of 1987 ICCAD
- W. Bliss and M. R. Lightner, "The VLSI Complexity of MAP Sequence Estimation," Proceedings, Twenty-first Asilomar Conference on Signals, Systems, and Computers, November 2-4, 1987.
- W. Bliss and M. R. Lightner, "Fault Tolerant Two-Dimensional Arrays for L-U and Q-R Factorization," Proceedings, Twenty-first Asilomar Conference on Signals, Systems, and Computers, November 2-4, 1987.
- W. Bliss and M. R. Lightner, "The VLSI Complexity of Maximum A Posteriori Sequence Estimation," 1988 Maple Press, Asilomar Conference 1987.
- W. Bliss, B. Friedlander, and M. R. Lightner, "Numerical Properties of Algorithm Based Fault Tolerance for High Reliability Computation," May 7, 1988, Twenty-second Asilomar Conference on Signals, Systems, and Computers, November 1988.
- M. Lightner and W. Wolf, "Experiments in Logic Synthesis," Proceedings of ICCAD 1988.

- G. Hachtel, M. Lightner, D. Bostick, R. Jacoby, C. Keene, P. Moceyunas, C. Morrison, X. Du, E. Schwarz, "BOLD: The Boulder Optimal Logic Design System," Hawaii International Conference on System Sciences, 1988. Received Best Paper Award.
- Sazegari, R. Byrd, M. Lightner, "Fast Algorithms for Best Real Rational Approximations," to appear in SIAM Conference on Optimization, April 1989.
- W. G. Bliss and M. R. Lightner, "The Reliability of Large Arrays for Matrix Multiplication with Algorithm-Based Fault-Tolerance," 3rd Workshop on Wafer-scale Integration, co-sponsored by AICA, AEI (Milano), Como, Italy, June 8, 1989.
- G. Colon-Bonet, E. M. Schwarz, D. G. Bostick, G. D. Hachtel, M. R. Lightner, "On Optimal Extraction of Combinational Logic and Don't Care Sets from Hardware Description Languages," IEEE International Conference on Computer-Aided Design, November 6-9, 1989.

Technical Reports:

- G. D. Hachtel and M. R. Lightner, "Techniques for the Application of the ASTAP Compatible Optimization Program A20P to the Design of Memory Circuit," IBM Research Report RC 4573, October 11, 1973.
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