

ABDOU YOUSSEF

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The George Washington University
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Citizenship USA

Education

- Ph.D. in Computer Science	Princeton University	2/88
- M.A. in Computer Science	Princeton University	6/85
- B.S. in Mathematics	The Lebanese University	10/81

Academic Experience

- The George Washington University
Department of Computer Science
 - o *Department Chairman* 7/1/08-6/30/14
 - o *Professor* 6/99-present
 - o *Associate Professor* 9/93-6/99
 - o *Assistant Professor* 9/87-8/93
- National Institute of Standards and Technology 9/94-present
Intermittent Faculty Appointment, Computer Scientist
- The Johns Hopkins University 9/95-6/95
Visiting Faculty
- Princeton University 9/84-8/87
Research/Teaching Assistant
- The Lebanese University 9/81-9/82
Lecturer

Research Interests Applications of Data Science and NLP, Math Search and Math NLP
Image/Video Processing, Parallel Processing, Algorithms

Awards

- Gold Medal from the US Department of Commerce 12/2011
- Co-recipient of the 2011 Government Computer News Award
for Outstanding Information Technology Achievement 2011
- Six-time winner of the *best-teacher-of-the-year award* 95, 97, 98, 99, 04, 09
The George Washington University
- Teaching/Research Assistantship Princeton University 1984-87
- A Merit Scholarship for a Ph.D. degree The Lebanese University 1983-87

Professional Societies

- Senior Member of IEEE
- Member of IEEE Computer Society

Courses Taught:

Data Compression	(Graduate)
Algorithms	(Graduate)
Discrete Mathematics	(Undergraduate)
Automata and Formal Languages	(Graduate and Undergraduate)
Object-oriented Programming	(Undergraduate)
Data Structures	(Graduate and Undergraduate)
Advanced Data Structures	(Graduate)
Advanced Computer Architecture	(Advanced Graduate)
Parallel Algorithms	(Advanced Graduate)
Parallel Processing	(Advanced Graduate)
Digital Libraries	(Advanced Graduate)

Number of Supervised Ph.D. Graduates:

27

Selected Publications:

1. Moritz Schubotz, Alexey Grigorev, Marcus Leich, Howard S. Cohl, Norman Meuschke, Bela Gipp, Abdou Youssef, and Volker Markl, "[Semantification of Identifiers in Mathematics for Better Math Information Retrieval](#)", [The 39th Annual ACM SIGIR Conference \(SIGIR 2016\), July 17-21, 2016, Pisa, Italy.](#)
2. Moritz Schubotz, Abdou Youssef, Volker Markl, Howard S. Cohl, "[Challenges of Mathematical Information Retrieval in the NTCIR-11 Math Wikipedia Task](#)", [The 38th Annual ACM SIGIR Conference \(SIGIR 2015\), August 9-13, 2015, Santiago, Chile.](#)
3. Qun Zhang and Abdou Youssef, "[Performance Evaluation and Optimization of Math-Similarity Search](#)", [Conference on Intelligent Computer Mathematics \(CICM 2015\), July 13-15, 2015, Washington, DC.](#)
4. Moritz Schubotz, Abdou Youssef, Volker Markl, Howard Cohl, and Jimmy Li, "[Evaluation of Similarity-Measure Factors for Formulae based on the NTCIR-11 Math Task](#)", [The 11th NTCIR Conference and Evaluation of Information Access Technologies, Dec. 9-12, 2014, Tokyo, Japan.](#)
5. Qun Zhang and Abdou Youssef, "[Semantics-Sensitive Math-Similarity Search](#)", [the Conferences on Intelligent Computer Mathematics \(CICM 2014\), July, 2014, Coimbra, Portugal.](#)
6. Youngser Park, Carey E. Priebe, and Abdou Youssef, "[Anomaly Detection in Time Series of Graphs using Fusion of Graph Invariants](#)", [the IEEE Journal of Selected Topics in Signal Processing, 2013.](#)
7. Xiaofan Feng, Abdou Youssef, and Sithu Sudarsan, "Robust Template Identification of Scanned Documents", [the 4th International Conference on Knowledge Discovery and Information Retrieval, pp. 103-110, October 2012, Barcelona, Spain.](#)

8. Youngser Park, Carey Priebe, Abdou Youssef, "[Anomaly Detection using Fusion of Graph Invariants on a Time Series of Graphs](#)", [Joint Statistical Meetings, Vancouver, BC, Canada, July 31 - August 5, 2010.](#)
9. Youngser Park, Carey Priebe, Dave Marchette, Abdou Youssef, "[Anomaly Detection using Scan Statistics on Time Series Hypergraphs](#)", [Workshop on Link Analysis, Counterterrorism and Security \(LACTS\) 2009, SIAM International Conference on Data Mining \(SDM 2009\), April 30 - May 2, 2009, Sparks, NV.](#)
10. Dong Hua, Dechang Chen, Fang Liu, and Abdou Youssef, "A Bayesian Approach to Multistage Fitting of the Variation of the Skeletal Age Features", [Journal of Biomedicine and Biotechnology, Volume 2009 \(2009\), Article ID 623853, 7 pages.](#)
11. Seyed Ali Ahmadi and Abdou Youssef, "[Lexical Error Compensation in Handwritten-based Mathematical Information Retrieval](#)," [Towards Digital Mathematics Library \(DML 2008\), July 27th, 2008, Birmingham, UK, part of the 7th International Conference on Mathematical Knowledge Management, 2008, pp. 43-54.](#)
12. Abdou Youssef, "[Relevance Ranking and Hit Description in Math Search](#)," [Journal of Mathematics in Computer Science, V. 2, 2008, p. 333-353.](#)
13. Bruce Miller and Abdou Youssef, "[Augmenting Presentation MathML for Search](#)," [Proceedings of the 7th Mathematical Knowledge Management conference, UK, July 2008.](#) Also in Springer, the [Lecture Notes in Computer Science series](#), [Intelligent Computer Mathematics, Volume 5144, pp 536-542, 2008.](#)
14. Abdou Youssef, "[Methods of Relevance Ranking and Hit-content Generation in Math Search](#)", [The 6th Mathematical Knowledge Management Conference, Hagenberg, Austria, June 27-30, 2007.](#)
15. Moody Altamimi and Abdou Youssef, "[Wildcards in Math Search, Implementation Issues](#)," [19th International Conference on Computer Applications in Industry and Engineering, November 7-9, 2007, San Francisco, California USA.](#)
16. Mohammed Shatnawi and Abdou Youssef, "[Equivalence Detection Using Parse-tree Normalization for Math Search](#)," [The Second International Conference on Digital Information Management \(ICDIM'07\), October 28-31, 2007.](#)
17. Abdou Youssef (Jointly with Moody Al-Tamimi), "[A more canonical form of content MathML to facilitate math search](#)", [The 2007 Extreme Markup Languages conference, Montréal, Canada, August 7-10, 2007.](#)
18. Abdou Youssef (Jointly with Moody Al-Tamimi), "[An Extensive Math Query Language](#)", [The ISCA 16th International Conference on Software Engineering and Data Engineering \(SEDE-2007\), Las Vegas, Nevada, July 9-11, 2007.](#)

19. Abdou Youssef, "[Roles of Math Search in Mathematics](#),"Spring-Verlag volume the Lecture Notes in Artificial Intelligence series. Also, an invited paper, the 5th Int'l Conf. on Mathematical Knowledge Management, August, 2006, UK, pp. 2-16.
20. Abdou Youssef and Mohammed Shatnawi, "[Math Search with Equivalence Detection Using Parse-tree Normalization](#)", The 4th International Conference on Computer Science and Information Technology, April 2006, Amman, Jordan.
21. Dong Hua and Abdou Youssef, "On Algorithmic Implementation of Local Dependence Modeling in Latent Structure Models." Journal Engineering Letters, special issue, 2006.
22. Abdou Youssef (jointly with Hamad Al-Aryani), "A Novel Audio Watermarking Technique Based on Low Frequency Components", 7th IEEE International Symposium on Multimedia (ISM'05) pp. 668-673, Dec 12-14, 2005, Irvine, California.
23. Abdou Youssef (jointly with Dong Hua and Dechang Chen), "[Identifying genes with the concept of customization](#),"2005 IEEE Computer Society Conf. on Computer Vision and Pattern Recognition (CVPR'05), Workshop on Bioinformatics, Vol 03, pp. 144, San Diego, June 2005.
24. Abdou Youssef, "[Search of Mathematical Contents: Issues And Methods](#),"the ISCA 14th Int'l Conf. on Intelligent and Adaptive Systems and Software Engineering (IASSE-2005), July 20-22, 2005, Toronto, Canada.
25. Remigius Onyszcak and Abdou Youssef, "Fingerprint Image Compression and the Wavelet Scalar Quantization Specification", a book chapter in a Fingerprint Imaging Technologies, Springer-Verlag, 2004, pp. 385-413, eds: Nalini Ratha and Ruud Bolle.
26. Abdou Youssef (Jointly with Dong Hua, Dechang Chen, and Xiuzhen Cheng), "Latent Structure Models for the Analysis of Gene Expression Data", the IEEE Computer Society Conference on Bioinformatics, pp. 496-499, 2003. Stanford, California.
27. Hyunju Kim and Abdou Youssef, "[Bit error recovery in internet facsimile without retransmission](#)", the Visual Communications and Image Processing 2003 Conference, July 8-11, 2003, Switzerland.
28. Hyunju Kim and Abdou Youssef, "[Bit Error Recovery in MMR Coded Bitstreams Using Error Detection Points](#)", proceedings of the 2003 International Conference on Imaging Science, Systems, and Technology, June 2003, Las Vegas, Nevada.
29. Hyunju Kim and Abdou Youssef, "[Bit Error Detection and Recovery for X2D MMR Coded Bitstreams](#)", proceedings of the IEEE International Conference on Image Processing, September 14-17, 2003, Barcelona, Spain.
30. Hyunju Kim and Abdou Youssef, "[Interactive Error Recovery in Facsimile without Retransmission](#)", the 1st IEEE Conference on Information Technology ITCC 2003, Las Vegas, Nevada, USA, April 2003.
31. Hyunju Kim and Abdou Youssef, "[Error Recovery in Facsimile without Retransmission](#)", the ISCA 18th International Conf. on Computers and their Applications, Honolulu, Hawaii, 3/2003.

32. Abdou Youssef, "Analysis of the Effects of Errors on Multiresolution JBIG Decoding of Binary, Grayscale and Color Images", the 2002 International Conference on Imaging Science, Systems, and Technology (CISST'2002), June 25-28, 2002, Las Vegas, Nevada.
33. Sherif Aly and Abdou Youssef, "[Synchronization-Sensitive Frame Estimation: Video Quality Enhancement](#)," [The International Journal of Multimedia Tools and Applications](#), 2002.
34. Abdou Youssef (Jointly with Bruce Miller), "[Technical Aspects of the Digital Library of Mathematical Functions](#)," [Annals of Mathematics and Artificial Intelligence](#), Volume 38, pp. 121--136, 2003. Also in [First International Workshop on Mathematical Knowledge Management, Schloss Hagenberg, Austria, Sept. 24-26, 2001](#).
35. Abdou Youssef and Alan Ratner, "Error Correction in HDLC without Retransmission," the 2001 International Conference on Imaging Science, Systems, and Technology (CISST'2001), June 25-28, 2001, Las Vegas, Nevada.
36. Abdou Youssef and Anastase Nakassis, "Metrics for Visual Data," the 2001 International Conference on Imaging Science, Systems, and Technology (CISST'2001), June 25-28, 2001, Las Vegas, Nevada.
37. Khalid Kaabneh and Abdou Youssef, "Muteness Based Audio Watermarking Technique", The 21st International Conference on Distributed Computing Systems, Phoenix/Mesa, Arizona, USA, April 16-19, 2001.
38. Sherif Aly and Abdou Youssef, "Real-Time Motion-Based Frame Estimation in Video Lossy Transmission", Proceedings of the 2001 Symposium on Applications and the Internet (SAINT-2001), San Diego, California, January 8-12, 2001.
39. Sherif Aly and Abdou Youssef, "Synchronization Sensitive Frame Estimation Techniques for Audio-Video Synchronization Restoration," the 2000 International Conference on Artificial Intelligence, Las Vegas, June 26-29, 2000.
40. Sherif Aly and Abdou Youssef, "Synchronization-Sensitive Frame Estimation Techniques for Audio-Video Synchronization Restoration," Proceedings of the Internet Computing 2000 conference, Las Vegas, Nevada, June 25-28, 2000.
41. Sherif Aly and Abdou Youssef, "Frame Estimation for Restoring Audio-Video Synchronization using Parallelized Quadratic Frame Interpolation," Proceedings of the PDPTA 2000 conference, Las Vegas, Nevada, June 25-28, 2000.
42. Sherif Aly and Abdou Youssef, "Synchronization-Sensitive Motion and Interpolation-Based Frame Estimation in Video Lossy Transmission," Proceedings of the SPIE Photonics East Multimedia Systems and Applications III Conference, 2-8 November, Boston, Massachusetts, 2000.

43. Sherif Aly and Abdou Youssef, "Frame Estimation for Restoring Audio-Video Synchronization Using Parallelized Quadratic Frame Interpolation," The 2000 International Conference on Parallel and Distributed Processing Techniques and Application, Las Vegas, June 26-29, 2000.
44. Abdelghani Bellaachia and **Abdou Youssef**, "Communication capabilities of product networks," *The Telecommunications Systems*, Spring 2000, pp. 119-133.
45. Abdou Youssef (jointly with S. R. Subramanya), "Evaluation of DCT Coding of Images under various Block sizes, Coefficient selections, and Quantizers", International Conference on Internet and Multimedia Systems and Applications, Bahamas, October 1999.
46. Abdou Youssef (Jointly with S. R. Subramanya, B. Narahari, and R. Simha), "Use of Transforms for Indexing in Audio Databases", International Conference on Computational Intelligence and Multimedia Applications, New Delhi, India, September 1999, pp. 278-284.
47. Mohammad Abbadi and Abdou Youssef, "[Block DCT-Based Indexing of Image Databases,](#)" [International Conference on Information Systems Analysis and Synthesis, Orlando, Florida, July 1999.](#)
48. Baha Khasawneh and Abdou Youssef, "Non-uniform Error Protection for Compressed Wavelet Transformed Images," IEEE Int'l Conf. on Multimedia Computing and Systems, Orlando, 7/99.
49. Abdou Youssef (jointly with S. R. Subramanya, I. Ersoy), "Segmentation of Audio Data Based on the Binary Images of the Audio Samples," Int'l Conf. on Intelligent Systems, Denver, June 1999.
50. Abdou Youssef, "[Image Downsampling and Upsampling Methods,](#)" [International Conference on Imaging, Science, Systems, and Technology CISST '99, Las Vegas, pp. 132-138, June 1999.](#)
51. Abdou Youssef (jointly with S. R. Subramanya, Bhagirath Narahari, and R. Simha), "Automated Classification of Audio Data and Retrieval Based on Audio Classes," the ISCA 14th Int'l Conf. on Computers and their Applications, Cancun, Mexico, pp. 141-145, April, 1999.
52. Abdou Youssef (Jointly with S. R. Subramanya, N. Alexandridis, P. Piamsa-nga, and S. Srakaew), "A Distributed Algorithm for Content-Based Image Retrievals Using Image Clusters," Int'l Conference on Management of Data, Hydersbad, india, December 1998.
53. S.R. Subramanya, S. Srakaew, Abdou Youssef, and N. Alexandridis, "[A Scheme for Automated Classification of Images,](#)" [ISCA CAINE98 Conference, Las Vegas, Nevada, November 1998.](#)
54. S.R.Subramanya and Abdou Youssef, "[Performance Evaluation of Lossy DPCM Coding of Images using Different Predictors,](#)" [ISCA CAINE98 Conference, Las Vegas, Nevada, November 1998.](#)
55. S.R.Subramanya and Abdou Youssef, "[Wavelet-based Indexing of Audio Data in Audio / Multimedia Databases](#)", 4th Int'l. Workshop on Multimedia DBMS, Dayton, Ohio, Aug. 1998.
56. M. Abbadi and Abdou Youssef "Indexing and Searching of image Data in Multimedia Databases," Int'l. Conf. on Information Systems Analysis and Synthesis, Orlando, Florida, 7/98.

57. Abdou Youssef, "[Parallel Algorithms for Entropy-coding Techniques,](#)" the Second European Parallel and Distributed Systems Conference (Euro-PDS98), Vienna, Austria, July 1998, pp. 313-318.
58. Abdou Youssef, "[An Efficient Parallel Algorithm for Multi-indexed Recurrence Relations with Applications to Compression of Multidimensional Signals,](#)" the Second European Parallel and Distributed Systems Conference (Euro-PDS98), Vienna, Austria, July 1998.
59. S.R. Subramanya, S. Srakaew, Abdou Youssef, and N. Alexandridis, "[Content-Based Retrieval of Images Using Pre-determined Image Classes,](#)" Int'l. Conference on Information Systems Analysis and Synthesis, Orlando, Florida, July 1998, pp.192--194.
60. S. R. Subramanya, P. Piamsa-nga, N. Alexandridis, and Abdou Youssef, "[A Scheme for Content-based Image Retrievals for Unrestricted Query Formats,](#)" International Conf. on Imaging, Science, Systems, and Technology, Las Vegas, Nevada, pp. 323-330, July 1998.
61. Abdou Youssef, "[Parallel Algorithms for Entropy-coding Techniques,](#)" the Second European Parallel and Distributed Systems Conference (Euro-PDS98), Vienna, Austria, July 1998.
62. Abdou Youssef, "[An Efficient Parallel Algorithm for Multi-indexed Recurrence Relations with Applications to Compression of Multidimensional Signals,](#)" Euro-PDS98, Austria, 7/98.
63. Abdou Youssef and Anastase Nakassis, "[Moment-preserving Modeling with Image Applications,](#)" Int'l Conf. on Imaging, Science, Systems, and Technology, Las Vegas, pp. 323-330, 7/98.
64. Sabrina Sowers and Abdou Youssef, "Testing Digital Watermark Resistance To Destruction," the Workshop on Information Hiding , Portland, Oregon, April 1998.
65. Manjit Bhatia and Abdou Youssef, "Performance Analysis and Fault Tolerance of Randomized Routing on Clos Networks," Telecommunication Systems Journal, Vol. 10, pp. 157-173, 1998.
66. Abdou Youssef, "Analysis and Comparison of Various Image Downsampling and Upsampling Methods" The Data Compression Conference, Snowbird, Utah, March 1998.
67. Abdou Youssef, "Parallel Algorithms for Multi-indexed Recurrence Relations with Applications to DPCM Image Compression" The Data Compression Conference, Snowbird, Utah, March 1998.
68. Abdou Youssef "Optimal Pipewiring of Hypercubes, Multidimensional Tori and Multistage Interconnection Networks," the 6th Telecommunications System Conference, Symposium on High Performance Computing & Interconnection Networks , Nashville, TN, March 1998.
69. S.R. Subramanya and Abdou Youssef, "Parallel Computation of Autocorrelation Matrices on a Limited Number of Processors," the ISCA 13th International Conference on Computers and Their Applications," Honolulu, Hawaii, March 1998.

70. Hoda El-Sayed and Abdou Youssef, "The r-Truncated Benes Networks and their Randomized Routing Algorithms," the 1997 International Conference on Parallel and Distributed Systems, Seoul, Korea, December 1997.
71. Hoda El-Sayed and Abdou Youssef, "Randomized Routing and the r-Truncated Benes Network," the 10th International Conference on Parallel and Distributed Computing, pp. 76-80, New Orleans, Louisiana, October 1997.
72. S. R. Subramanya, R. Simha, Bhagirath Narahari, and Abdou Youssef, "[Transform-Based Indexing of Audio data for Multimedia Databases](#)," [Int'l Conf. on Multimedia Computing and Systems, Ottawa, Canada, June 1997.](#)
73. Abdou Youssef, "Selection of Good Biorthogonal Wavelets for Data Compression," Int'l Conf. on Imaging, Science, Systems, and Technology, Las Vegas, pp. 323-330, 6/1997.
74. S. R. Subramanya and Abdou Youssef, "[Parallel Algorithms for Indexing and Retrieval in Audio Databases](#)", [ISCA 97, pp. 611-618.](#)
75. Abdou Youssef, "Error Resiliency Issues in Wavelet Compression," Data Compression Conference, Snowbird, Utah, March 1997.
76. Abdou Youssef, "[Pipewiring: an Intra-link Pipelining Technique for Faster Clocks and Communication in Parallel Systems](#)," [11th International Conference on Mathematical and Computer Modelling and Scientific Computing, March 1997, Washington, DC.](#)
77. Abdou Youssef and Hoda El-Sayed, "[Optimization of Randomized Routing on Benes Networks](#)," [11th International Conference on Mathematical and Computer Modelling and Scientific Computing, March 1997, Washington, DC.](#)
78. Dong Hua and **Abdou Youssef**, "Single Digit Region of Interest (SDROI) Extraction by Reducing the Tissue Influence," the *Journal of Optimization Methods and Software*, special issue, 2006, Kluwer Academic Publishers.
79. Manjit Bhatia and Abdou Youssef, "Performance Analysis and Fault Tolerance of Randomized Routing on Clos Networks," 6th Symposium of the frontiers of Massively Parallel Computation, October 1996, Annapolis, Maryland.
80. Harmel Singh and Abdou Youssef, "Mapping and Scheduling Heterogeneous Task Graphs Using Genetic Algorithms," Fifth Workshop on Heterogeneous Computing at the Tenth International Parallel Processing Symposium, Honolulu, Hawaii, April 1996.
81. Abdelghani Bellaachia and Abdou Youssef, "Broadcasting in Banyan-Hypercubes and Cross-Cubes," *International Journal of Computers and their Applications*, Vol. II, No. 1, pp. 12--18, April 1995.
82. Abdelghani Bellaachia and Abdou Youssef, "Personalized Broadcasting in Banyan Hypercubes", *Proceedings of the IEEE/ACM 4th Int'l Conference on Computer Communications and Networks*, Las Vegas, Nevada, pp. 470-474, Sept. 20-23, 1995.

83. Abdou Youssef, "Translation of Serial Recursive Codes to Parallel SIMD Codes," Proc. of the 3rd Conference on Parallel Architecture and Compilation Techniques, Limassol, Cyprus, pp. 254--263, July 1995.
84. Abdelghani Bellaachia and Abdou Youssef, "A Unified Theory for a Traffic Analysis in Product Network," Proceedings of the 9th International Parallel processing Symposium, Santa Barbara, California, April 1995.
85. Abdou Youssef, "Design and Analysis of Product Networks," the 5th Symp. on the Frontiers of Massively Parallel Computation, McLean, Virginia, pp. 512--528, Feb. 1995.
86. Abdelghani Bellaachia and Abdou Youssef, "New Dynamic Partitioning Strategies for Hypercube Computers," Seventh International Conference on Parallel and Distributed Computing Systems, October 1994.
87. Bhagirath Narahari, Abdou Youssef, and H.-A. Choi, "Matching and Scheduling in a Generalized Optimal Selection Theory," Third Workshop on Heterogeneous Computing at the Eighth International Parallel Processing Symposium, Cancun, Mexico, pp. 3--8, April 1994.
88. Abdelghani Bellaachia and Abdou Youssef, "Broadcasting in Banyan-Hypercubes and Cross-Cubes," 6th Int'l Conference on Parallel and Distributed Computing and Systems, Kentucky, pp. 18--24, October 14--16, 1993.
89. Tarek El-Ghazawi and Abdou Youssef, "A General Framework for Developing Adaptive Fault-Tolerant Routing Algorithms," IEEE Transactions on Reliability, Vol. 42, No. 2, pp. 250--258, June 1993.
90. Abdou Youssef, "Randomized Self-Routing Algorithms for Clos Networks," Computers and Electrical Engineering, Vol. 19, No. 6, pp. 419--429, 1993.
91. Abdou Youssef, "Off-line Permutation Routing on Circuit-Switched Fixed Routing Networks," Special Issue of NETWORKS Journal, Vol. 23, pp. 441--448, 1993.
92. Abdou Youssef, "A Parallel Algorithm for Random Walk Construction with Application to the Monte Carlo Solution of Partial Differential Equations," IEEE Trans. on Parallel and Distributed Systems, Vol. 4, No. 3, pp. 355--360, Mar. 1993.
93. Youssef and Bruce Arden, "Functional and Topological Relations among Banyan Multistage Networks of Differing Switch Sizes," IEEE Transactions on Parallel and Distributed Systems, Vol. 4, No. 2, pp. 235--240, Feb. 1993.
94. Tarek El-Ghazawi and Abdou Youssef, "Fault-Tolerant Routing in Product Networks," the International Journal of Mini and Microcomputers, Vol. 15, No. 3, pp. 140--144, 1993.
95. Abdou Youssef and Bruce Arden, "Topology of Efficiently Controllable Banyan Multistage Networks," the international journal Microprocessors and Microsystems, Vol. 16, No. 1, pp. 3--13, 1992.

96. Abdou Youssef, "[Off-line Permutation Routing on Circuit-Switched Fixed Routing Networks,](#)" [the 4th Symposium on the Frontiers of Massively Parallel Computation, McLean, Virginia, pp. 389--396, October, 1992.](#)
97. Abdelghani Bellaachia and Abdou Youssef, "[Traffic Analysis of Hypercubes and Banyan-Hypercubes,](#)" [the 4th Symposium on the Frontiers of Massively Parallel Computation, McLean, Virginia, pp. 262--269, October, 1992.](#)
98. Abdou Youssef and Isaac Scherson, "[Randomized Routing on Benes-Clos Networks,](#)" [Proceedings of the New Frontiers, A Workshop on Future Directions of Massively Parallel Processing, McLean, Virginia, pp. 107--117, October 19, 1992.](#)
99. Manjit Bhatia and Abdou Youssef, "[Efficient Randomized Fault-Tolerant Routing on Clos Network,](#)" [the 1992 Workshop on Fault-Tolerant Parallel and Distributed Systems, Amherst, MA, pp. 217--224, July 1992.](#)
100. Tarek El-Ghazawi and Abdou Youssef, "[A Unified Approach to Fault-Tolerant Routing,](#)" [The 12th International Conference on Distributed Computing Systems, Yokohama, Japan, June 1992.](#)
101. Tarek El-Ghazawi and Abdou Youssef, "A Unified Approach to Fault-Tolerant Routing," The 12th International Conference on Distributed Computing Systems, Yokohama, Japan, June 1992.
102. Abdou Youssef, "[On-Line Communication on Circuit-Switched Fixed Routing Meshes,](#)" [the Sixth International Parallel Processing Symposium, Beverly Hills, California, pp. 390-397, March 1992.](#)
103. Abdou Youssef, Brian Alleyne and Isaac Scherson, "[Permutation Routing in Restricted Access Networks,](#)" [the Sixth International Parallel Processing Symposium, Beverly Hills, California, pp. 403--406, March 1992.](#)
104. Abdou Youssef and Bhagirath Narahari, "Topological Properties of Generalized Banyan-Hypercube Networks," *Journal of Parallel and Distributed Computing*, Vol. 14, No. 1, pp. 98--103, Jan. 1992.
105. Abdou Youssef and T. El-Ghazawi, "Fault Tolerant Routing in Product Networks," *Proceedings of the 4th ISMM/IASTED Int'l Conf. on Parallel and Distributed Computing and Systems - Vol. II*, Washington, District of Columbia, pp. 6--7, Oct. 1991.
106. H.-A. Choi, Bhagirath Narahari, S. Rotenstreich and Abdou Youssef, "Scheduling on Parallel Processing Systems Using Parallel Primitives," *A Book Chapter in Parallel Architectures*, Ed. N. Rishé, S. Navathe and D. Tal, IEEE Comp. Soc. Press, pp. 88--107, 1991.
107. Abdou Youssef, "[Cartesian Product networks,](#)" [The Proc. of the International Conference on Parallel Processing, Chicago, Aug. 1991.](#)
108. Abdou Youssef, "[Efficient Randomized Routing on Clos Networks,](#)" [the 5th International Parallel Processing Symposium, Anaheim, California, pp. 410--415, April 1991.](#)

109. Abdelghani Bellaachia and Abdou Youssef, ["Greedy Partitioning Strategy of Banyan-Hypercube Networks," the 5th International Parallel Processing Symposium, Anaheim, California, pp. 487--490, April 1991.](#)
110. Abdou Youssef and Bruce Arden, ["Topology of Efficiently Controllable Banyan Multistage Interconnection Networks," the Proc. of the Second Symposium on Parallel and Distributed Processing, Dallas, Texas, pp. 79--86, Dec. 1990.](#)
111. Abdou Youssef and Bruce Arden, ["Functional and Topological Relations among Banyan Multistage Networks of Differing Switch Sizes," the Proc. of 3rd Symposium on the Frontiers of Massively Parallel Computations, University of Maryland, College Park, Maryland, pp. 284--293, Oct. 1990.](#)
112. Abdou Youssef and Bhagirath Narahari, ["Topological Properties of Banyan-Hypercube Networks," the Proc. of 3rd Symposium on the Frontiers of Massively Parallel Computations, University of Maryland, College Park, Maryland, pp. 324--332, Oct. 1990.](#)
113. Abdelghani Bellaachia and Abdou Youssef, ["Partitioning on the Banyan-hypercube Networks," the Proc. of 3rd Symposium on the Frontiers of Massively Parallel Computations, University of Maryland, College Park, Maryland, pp. 343--351, Oct. 1990.](#)
114. Abdou Youssef and Bruce Arden, ["Structure of Digit Permutation Networks," The Proc. of the International Conference on Parallel Processing, Chicago, Aug. 1990.](#)
115. Abdou Youssef and Bruce Arden, "Equivalence Between Functionality and Topology of LogN-Stage Networks," IEEE Transactions on Computers, Vol. 39, No. 6, pp. 829--832, June 1990.
116. Abdou Youssef and Bruce Arden, ["A New Approach to Fast Control of \$r^2 \times r^2\$ 3-Stage Benes Networks of \$r \times r\$ Crossbar Switches," The 17th International Conference on Computer Architecture, Seattle, Washington, pp. 50-59, May 1990.](#)
117. Abdou Youssef, "A Parallel Algorithm for Random Walk Construction with Application to the Monte Carlo Solution of Partial Differential Equations," the 4th Annual Parallel Processing Symposium, Fullerton, California, pp. 554--568, April 1990.
118. Abdou Youssef and Bhagirath Narahari, "The Banyan-Hypercube Networks," IEEE Trans. on Parallel and Distributed Systems, Vol. 1, No. 2, pp. 160--169, Apr. 1990.
119. H.-A. Choi, Bhagirath Narahari, S. Rotenstreich and Abdou Youssef, "Scheduling on Parallel Processing Systems Using Parallel Primitives", PARBASE-90: Two Track International Conference on Databases, Parallel Architectures and their Applications, Florida, pp. 56--65, March 1990.
120. N. Alexandridis, H.-A. Choi, Bhagirath Narahari, S. Rotenstreich, Abdou Youssef and C. Kolli, "A Framework for a Portable, Intelligent Operating System for Parallel Machines", Proceedings of the ISMM International Symposium on Intelligent Distributed Processing, Florida, pp. 14--17, December 1989.
121. N. Alexandridis, P.Papaioannou, B.Narahari and Abdou Youssef, "A Software Environment of Architecture Prototypes Evaluating Parallel Vision Systems and Algorithms," the Proceedings of

the IEEE International Workshop on Tools for Artificial Intelligence, Washington, DC, pp. 518--526, October 1989.

122. Bhagirath Narahari, S. Rotenstreich and Abdou Youssef, "A Parallel Primitives Approach to Parallel Programming," The 12th Minnowbrook Workshop: Software Engineering for Parallel Computing, New York, pp. 99--109, July 1989.
123. Abdou Youssef and Bhagirath Narahari, "Routing, Embedding and Partitioning on the Banyan-Hypercube," The First Annual Symposium, Parallel and Distributed Processing, Dallas, Texas, pp. 383-384, May 1989.
124. N. Alexandridis, H.-A. Choi, Bhagirath Narahari, Shmuel Rotenstreich and Abdou Youssef, "[A Hierarchical, Partitionable, Knowledge-Based Parallel Processing System,](#)" [Third Annual Parallel Processing Symposium, Fullerton, California, pp. 843--859, March 1989.](#)
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