Exhibit A

Allen Gersho

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Education

Ph. D. (E.E.) Cornell University, 1963.
M.S. (E.E.) Cornell University, 1961.
B.S. (E.E.) Massachusetts Institute of Technology, 1960.

Experience

2001-present
Expert consultant to law firms.
Professor Emeritus & Research Professor, UCSB.

4/2000 – 4/2001
Digital Media Architect, Microsoft Corporation

9/1996 - 3/2000
CEO and co-founder, SignalCom, Inc. (Acquired by Microsoft April 2000)

1980 - 1998:
Professor, Electrical & Computer Engineering, University of California, Santa Barbara.
Research in speech, audio, image and video compression, and vector quantization
techniques. Directed the Signal Compression Laboratory.

1981- present:
Independent Consultant. Consulting services in audio compression and other areas of
signal processing and telecommunications. Expert consulting for intellectual property law
firms.

1987 - Present:
President and founder, VoiceCraft, Inc. - technology licensing.

1981-1991
Sole Proprietor, Technology Tutorials. Lecturer and administrator, public and in-plant
continuing education short courses in digital telephony. Consulting services.

1988-1993:
Director, Center for Information Processing Research, University of California, Santa Barbara. Research in signal processing and communications.

1984-1989:
Principal Investigator of a research project on high-quality speech compression at 4800 bp/s for the NASA Mobile Satellite Experiment sponsored by Jet Propulsion Laboratory for NASA.

1980-1981:
Consultant, Signal Technology, Inc.

1963-1980
Member of Technical Staff, AT&T Bell Laboratories. Research activities in digital communications, adaptive signal processing, quantization, and other areas.

Publications

About 300 technical research papers in various areas of speech, audio, image and video processing and compression, digital communications, data transmission, signal processing, solid-state circuits, spectroscopy, and biophysics. Many papers have since been reprinted in collections of benchmark papers in IEEE Press and other reprint books and three have won prize paper awards. Author of the book Vector Quantization and Signal Compression, (760 pages), with R. M. Gray, published 1992, by Kluwer Academic Publishers, currently in its 8th printing, Japanese translation published in 1998. Co-editor with B.S. Atal, and V. Cuperman of Advances in Speech Coding, published 1991, and of Advances in Speech and Audio Coding for Wireless and Network Applications, published 1993, both by Kluwer Academic Publishers.

Lectures

Many invited lectures at universities and corporations around the world on current research results in speech compression and other areas; tutorial training courses in digital telecommunications and signal processing for corporate and academic continuing education programs. NATO AGARD Invited Lecturer on Speech Coding for Man-Machine Speech Communications Lecture Series, Turkey/Norway/U.S., 1990. Invited lecturer on Speech Coding for NATO Advanced Study Institute, Bubion, Spain, 1993. Invited plenary lectures: 1994 European Conference on Signal Processing, 1995 IEEE Workshop on Speech Coding for Telecommunications.

Patents

About 20 issued U.S. patents and several international counterparts on speech, audio compression, digital filtering, adaptive equalization, channel coding/modulation, and adaptive quantization.

Professional Activities

Member Technical Program Committee, IEEE Workshop on Speech Coding for Telecommunications, St. Jovite, Quebec, Canada, 1993.
Member Technical Program Committee, IEEE Workshop on Speech Coding for Telecommunications, Whistler, B.C. Canada, 1991.
Co-Chairman, IEEE Workshop on Communication Theory, Ojai, June 1990.
Associate Editor of the IEEE Transactions on Communications
Co-Chairman, IEEE Workshop on Speech Coding for Telecom., Vancouver, Sept. 1989
Member, IEEE Kilby Medal Award Committee, 1997-1999
Member Fellow Award Committee, Acoustics, Speech, Signal Proc. Society, 1991-99
Member Awards Board, IEEE Communications Society, 1990-1993.
Member Board of Governors, IEEE Communications Society, 1982-85.
General Chairman and founder, CRYPTO 81, conference on cryptography.
Editor, IEEE Communications Magazine, 1978-80.
Frequent editorial duties for IEEE journals.
Member, IEEE technical committees on signal processing and communication theory.

Awards and Honors

IEEE James L. Flanagan Speech and Audio Processing Award, 2007.
Society Award, IEEE Signal Processing Society, 2003
IEEE Millennium Medal, 2000.
Ericsson-Nokia Prize Paper Award, 1999.
Circuits and Systems Video Technology Prize Paper Award, 1992.
Guillemin-Cauer Prize Paper Award, 1978.
NASA Tech Brief Awards for technical innovation, 1987, 1988, 1992.
IEEE Centennial Medal, 1984.
Donald McLellan Meritorious Service Award, IEEE, 1983
Elected Fellow of the IEEE, 1982.

ALLEN GERSHO: Publications (1963-Present)

1. A. Gersho, "Characterization of Time-Varying Linear Systems," Proc. IEEE, vol. 51, p. 238, January 1963.

2. A. Gersho, "Characterization of Randomly-Varying Linear Systems," Proc. IEEE, vol. 51, p. 399, February 1963.

3. A. Gersho, "Characterization of Time-Varying Linear Systems," Cornell Univ. Research Report EE559, Ph.D. Dissertation, Cornell University, June 1963.

4. A. Gersho and N. DeClaris, "Duality Concepts in Time-Varying Linear Systems," IEEE Int. Convention Record, Part 1, pp. 344-356, 1964.

5. B. K. Kinariwala and A. Gersho, "A Stability Criterion for Non-uniformly Sampled and Distributed Parameter Systems," Bell System Technical Journal, vol. 45, pp. 1153-1155, September 1966.

6. A. Gersho, "Automatic Time-Domain Equalization with Transversal Filters," Proc. National Electronics Conf., vol. 22, pp. 928-933, October 1966.

7. A. Gersho, "Pulse Stretching with Time-Varying Networks," Proc. IEEE, vol. 54, pp. 1574-1575, November 1966.

8. A. Gersho and B. J. Karafin, "Mutual Synchronization of Geographically Separated Oscillators," Bell System Technical Journal, vol. 45, pp. 1689-1704, December 1966.

9. A. Gersho, "Properties of a Class of Nonlinear Systems," Proc. First Annual Princeton Conf. on Information Sciences and Systems, pp. 163-166, March 1967.

10. A. Gersho and S. L. Freeny, "Performance Capabilities of Transversal Equalizers for Digital Communication," Conf. Digest, IEEE Int. Conf. on Communication, Minneapolis, June 1967.

11. A. Gersho, "Automatic Equalization of Highly Dispersive Channels for Data Transmission," Proc. Int. Symposium on Information Theory, San Remo, Italy, September 1967.

12. A. Gersho, "Automatic Equalization of Highly Dispersive Channels for Data Transmission," Abstract in IEEE Trans. on Information Theory IT-14, No. 6, pp. 834, November 1968.

13. A. Gersho, "Adaptation in a Quantized Parameter Space," Proc. Sixth Annual Allerton Conf. on Circuit and Systems Theory, pp. 646-653, Monticello, IL, October 1968.

14. A. Gersho and B. K. Kinariwala, "A Synthesis Algorithm for Cascaded Transmission Lines," Proc. Sixth Annual Allerton Conf. on Circuit and System Theory, pp. 889-898, Monticello, IL, October 1968.

15. A. Gersho, "Convergence Properties of an Adaptive Filtering Algorithm," Proc. Second Asilomar Conf. on Circuits and Systems, pp. 302-304, October 1968.

16. A. Gersho, "Adaptive Equalization of Highly Dispersive Channels for Data Transmission," Bell System Technical Journal, vol. 48, No. 1, pp. 55-70, January 1969.

17. A. Gersho, "Nonlinear Systems with a Restricted Additivity Property," IEEE Trans. on Circuit Theory CT-16,No. 2, pp. 150-154, May 1969.

18. A. Gersho, "Solving Nonlinear Network Equations Using Optimization Techniques," Bell System Technical Journal, vol. 48, No. 9, pp. 3135-3138, November 1969.

19. A. Gersho, "Some Aspects of Linear Estimation with Non-Mean-Square Error Criteria," Proc. Third Asilomar Conf. on Circuits and Systems, Pacific Grove, CA, December 1969.

1970-1980

20. A. Gersho, "Linear Adaptation," Proc. 1969 Polytechnic Institute of Brooklyn Symposium on Computer Processing in Commun.. 1970.

21. A. Gersho, Review of: "Circuit Theory: An Introduction to the State Variable Approach," R. A. Rohrer, McGraw-Hill: IEEE Spectrum, July 1970.

22. A. Gersho and D. J. Goodman, "Projecting Filters for Recursive Prediction of Discrete-Time Processes," Bell System Technical Journal, vol. 49, No. 10, pp. 2377-2403, December 1970.

23. A. Gersho, "Adaptive Equalization for Data Transmission," Proc. National Electronics Conf., vol. 26, pp. 154-157, December 1970.

23A. A. Gersho, "Adaptive Filtering with Binary Reinforcement," IEEE Inter. Conf. Information Theory, Asilomar, (abstract) Jan. 1972.

23B. A. Gersho, "Stochastic Stability of Delta Modulation," IEEE Inter. Conf. Information Theory, Asilomar, (abstract) Jan. 1972.

24. A. Gersho, "Stochastic Stability of Delta Modulation," Bell System Technical Journal, vol. 51, No. 4, pp. 821-841, April 1972.

25. A. Gersho, Review of: "Adaptive Filters," Aspects of Network and System Theory, B. Widrow, (ed. R.E. Kalman and N. DeClaris), Holt, 1971; IEEE Circuit Theory Group Newsletter, vol. 6, No. 2, pp. 14-15, April 1972.

26. D. J. Goodman and A. Gersho, "Theory of an Adaptive Quantizer," Proc. of 1973 IEEE Symposium on Adaptive Processes, Decision and Control, pp. 361-365, December 1973.

27. D. J. Goodman and A. Gersho, "Adaptive Quantization of Speech: Static and Dynamic Performance," Proc. 8th Int. Congress on Acoust., London, England, (Abstract) p. 249, July 1974.

28. D. J. Goodman and A. Gersho, "Theory of an Adaptive Quantizer," IEEE Trans. on Commun., vol. COM-22, No. 8, pp. 1037-1045, August 1974.

29. A. Gersho and D. J. Goodman, "A Training Mode Adaptive Quantizer," IEEE Int. Symposium on Information Theory, Notre Dame, Indiana, (Abstract) pp. 65-66, October 28-31 1974.

30. A. Gersho and D. J. Goodman, "A Training Mode Adaptive Quantizer," IEEE Trans. on Information Theory, vol. IT-20, No. 6, pp. 746-749, November 1974.

31. A. Gersho and D. Mitra, "A Simple Growth Model for the Diffusion of a New Communication Service," IEEE Trans.on Systems, Man and Cybernetics, vol. SMC-5, pp. 209-216, March 1975.

32. A. Gersho and B. Gopinath, "Filtering with Charge Transfer Devices," Proc. IEEE Int. Symposium on Circuits and Systems, pp. 183-186, April 1975.

33. A. Gersho, "Recursive Filtering with Charge Transfer Devices," Conf. Record IEEE Int. Conf. on Communication, pp. 2.15-2.19, June 1975.

34. A. Rosencwaig and A. Gersho, "Photoacoustic Effect with Solids: A Theoretical Treatment," Science, vol. 190, pp. 556-557, November 1975.

35. A. Gersho, "Charge-Coupled Devices: The Analog Shift Register
Comes of Age," IEEE Commun. Society Magazine, vol. 13, No. 6, pp. 27-32, November 1975.

36. A. Gersho, "Adaptive Equalization of Highly Dispersive Channels for Data Transmission," (reprint of 1969 paper), in Data Transmission, L.E. Franks, editor, Dowden, Hutchinson and Ross, 1975.

37. A. Rosencwaig and A. Gersho, "Theory of the Photoacoustic Effect with Solids," J. Appl. Phys., vol. 47, No. 1, pp. 64-69, January 1976.

38. A. Gersho and B. Gopinath, "Multiplexed Filtering with Charge Transfer Devices," IEEE J. Solid-State Circuits, February 1976.

39. D. J. Goodman and A. Gersho, "Theory of an Adaptive Quantizer," Waveform Quantization and Coding, (reprint of 1974 paper), IEEE Press, N.S. Jayant, editor, 1976.

39a. D. J. Goodman and A. Gersho, "On a Class of Adaptive Quantizers," IEEE Inter. Symp. Information theory, (Abstract) June 1976.

40. M. Orentlicher and A. Gersho, "a Quantitative Model for Actin Myosin Interaction in Skeletal Muscle" Biophysical Journal, vol. 18, pp.141-159, April 1977

41. A. Gersho, "Quantization, "IEEE Commun. Society, vol. 15, No. 5 pp. 16-29, September 1977

41a. A. Gersho, "Asymptotically Optimal Block Quantization," (Abstract), Conf. Digest, IEEE Int. Symposium on Information Theory, Ithaca, NY October 1977.

42. A. Gersho and B. Gopinath, "Charge-Routing Networks," Proc. IEEE Int. Conf. on Circuits and Systems, May 1978.

43. A. Gersho, Review of Book: Charge-Coupled Devices: Technology and Applications, by R. Melen and D. Buss, IEEE Press, IEEE Trans. Acoust. Speech, Signal Processing, April 1978.

44. A. Gersho, "Principles of Quantization," IEEE Trans. on Circuits and Systems, (Invited Paper) vol. CAS-25, No. 7, pp. 426-427, July 1978.

45. A. Gersho, "Communications Privacy," IEEE Commun. Magazine, November 1978.

46. A. Gersho and B. Gopinath, "Charge-Routing Networks," IEEE Trans. Circuits and Systems, vol. CAS-26, No. 2, pp. 81-92, February 1979.

47. A. Gersho, "Charge Transfer Filtering" (Invited Paper) Proc. IEEE, vol. 67, No. 2 pp. 196-218, February 1979.

48. A. Gersho, B. Gopinath, and A. Odlyzko, "Coefficient Inaccuracy in FIR Filters," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 375-377, 1979.

49. A. Gersho, "On Perfect Secrecy Encryption of Analog Signals," (Abstract), Conf. Digest, IEEE Int. Symposium on Information Theory, Trieste, Italy, June 1979.

50. A. Gersho, "Asymptotically Optimal Block Quantization," IEEE Trans. on Inform. Theory, vol. IT-25, No. 4, pp. 373-380, July 1979

51. A. Gersho, B. Gopinath, and A.Odlyzko, "Coefficient Inaccuracy in Transversal Filtering," Bell System Tech. J., vol. 58, No. 10, pp. 2301-2316, December 1979.

52. A. Gersho, "Encryption of Analog Signals: Scrambling versus Digitization," Conf. Record, IEEE National Telecommunications Conf., December 1979.

1981

53. A. Gersho, "Readings in Pulse-Code Modulation," (Book Review) IEEE Commun. Magazine, vol. 19, No. 5, September 1981.

54. A. Gersho, "Performance Bounds for Analog Signal Encryption," Proc. 1981 Int. Telemetering Conf., pp. 133-138, October 1981.

55. A. Gersho and T.L. Lim, "Adaptive Cancellation of Intersymbol Interference for Data Transmission," Bell System Tech. J., vol. 60, No. 9, pp. 1996-2011, November 1981.

56. A. Gersho, "A Structural Approach to Vector Quantization," Proc. National Telecomm. Conf., New Orleans, pp. F4.1-F4.5, November 1981.

1982

57. A. Gersho, "On the Structure of Vector Quantizers," IEEE Trans. Inform. Theory, vol. 28, No. 2, pp. 157-166, March 1982.

58. A. Gersho and B. Ramamurthi, "Image Coding Using Vector Quantization," Proc. Calspace Investigators Conf., pp. 41-43 March 1982.

59. A. Gersho and B. Ramamurthi, "Image Coding Using Vector Quantization," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 428-431 May 1982.

60. V. Cuperman and A. Gersho, "Adaptive Differential Vector Coding of Speech," Conf. Record, IEEE Global Telecomm. Conf., pp. 1092-1096, December 1982.

1983

61. B. Ramamurthi and A. Gersho, "Image Coding Using Segmented Codebooks," Proc. Int. Picture Coding Symposium, PCS 83, pp. 44-45, Davis, March 1983.

62. Cheng-Shu Wang and A. Gersho, "A Bound on the Number of Nearest Neighbors of a Euclidean Code," (Abstract), Conf. Digest, IEEE Int. Symp. on Inform. Theory, p. 43, September 1983.

63. A. Gersho and V. Cuperman, "Vector Predictive Source Coding" (Abstract), Conf. Digest, IEEE Int. Symp. on Inform. Theory, pp. 44-45 September 1983.

64. A. Gersho and D. Y. Cheng, "Fast Nearest Neighbor Search for Nonstructured Euclidean Codes," (Abstract), Conf. Digest, IEEE Int. Symp. on Inform. Theory, p.88, September 1983.

65. A. Gersho, "Quantization" (reprint of 1977 paper), in Tutorials in Modern Commun., V.B. Lawrence, J. L. LoCicero, and L. B. Milstein, eds., Computer Science Press, Rockville, Maryland. pp. 5-14, 1983.

66. A. Gersho, "Charge-Coupled Devices: The Analog Shift Register Comes of Age," (reprint of 1975 paper), in Tutorials in Modern Commun., V. B. Lawrence, J. L. LoCicero, and L. B. Milstein, eds., Computer Science Press, Rockville, Maryland. pp. 260-265, 1983.

67. A. Gersho and V. Cuperman, "Speech Waveform Coding Using Vector Quantization," Conf. Record, Conf. Record, IEEE Global Telecomm. Conf., pp. 193-197-December 1983.

68. B. Ramamurthi, A. Gersho and A. Sekey, "Low-Rate Image Coding Using Vector Quantization," Conf. Record, Conf. Record, IEEE Global Telecomm. Conf., pp. 184-187, December 1983.

69. A. Gersho and V. Cuperman, "Vector Quantization: A Pattern Matching Technique for Speech Coding," IEEE Commun. Magazine, vol. 21, No. 9, pp. 15-21, December 1983.

1984

70. A. Gersho, "Adaptive Filtering with Binary Reinforcement," IEEE Trans. Inform. Theory, vol.IT-30, pp. 191-199, March 1984.

71. A. Gersho and Yair Shoham, "Hierarchical Vector Quantization of Speech with Dynamic Codebook Allocation," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 10.9.1-10.9.4, San Diego, March 1984.

72. A. Gersho, T. Ramstad, and I. Versvik, "Fully Vector-Quantized Subband Coding with Adaptive Codebook Allocation," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 10.7.1-10.7.4, San Diego, March 1984.

73. D. Y. Cheng, A. Gersho, B. Ramamurthi, and Y. Shoham, "Fast Search Algorithms for Vector Quantization and Pattern Matching," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 911.1-911.4, San Diego, March 1984.

74. B. Ramamurthi and A. Gersho, "Image Vector Quantization with a Perceptually-Based Cell Classifier," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 32.10.1-32.10.4, San Diego, March 1984.

75. B. Ramamurthi and A. Gersho, "Edge-Oriented Spatial Filtering of Images with Application to Post-Processing of Vector-Quantized Images," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 48.10.1-48.10.4, San Diego, March 1984.

76. A. Gersho and E. Biglieri, "Adaptive Cancellation of Channel Nonlinearities for Data Transmission," Conf. Rec., 1984 IEEE Inter. Conf. on Commun., Amsterdam, May 1984, pp. 1239-1242.

77. A. Gersho and Victor Lawrence, "Multidimensional Signal Design for Voiceband Data Transmission," Conf. Rec., 1984 IEEE Int. Conf. on Commun., Amsterdam, May 1984, pp. 377-380.

78. Y. Shoham and A. Gersho, "Pitch Synchronous Transform Coding of Speech at 9.6 Kb/s Based on Vector Quantization," Conf. Rec., 1984 IEEE Int. Conf. on Commun., pp. 1179-1182, Amsterdam, May 1984,

79. A. Gersho and R. Steele, "Encryption of Analog Signals: A Perspective," IEEE Trans. on Selected Areas in Commun., pp. 423-425, May 1984.

80. A. Gersho, "Perfect Secrecy Encryption of Analog Signals," IEEE Trans. on Selected Areas in Commun., pp. 460-466, May 1984.

81. A. Gersho, "Reduced Complexity Implementation of Passband Adaptive Equalizers," (Special Issue on Voiceband Data Commun.) IEEE Trans. on Selected Areas
in Commun., vol. SAC-2, pp. 778-779, September 1984.

82. A. Gersho and V. Lawrence, "Multidimensional Signal Constellations for Voiceband Data Transmission," IEEE Journal on Selected Areas in Commun., (Special Issue on Voiceband Data Commun.) vol. SAC-2, pp. 687-702, September 1984.

83. E. Biglieri, A. Gersho, R.D. Gitlin, T. Lim, "Adaptive Cancellation of Nonlinear Intersymbol Interference for Voiceband Data Transmission," IEEE Journal on Selected Areas in Commun., (Special Issue on Voiceband Data Commun.) vol. SAC-2, pp. 765-777, September 1984.

1985

84. M. Yano and A. Gersho, "Adaptive Vector Quantization of Images by Progressive Codevector Replacement," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 4.6.1-4.6.4, Tampa, March 1985.

85. G. Davidson, R. Aravind, T. Stanhope, and A. Gersho, "Real-Time Speech Compression with a VLSI Vector Quantization Processor," Proc. IEEE Int. Conf. Acoust., Speech, Signal Proc., pp. 37.6.1-37.6.4, Tampa, March 1985.

86. Y. Shoham and A. Gersho, "Efficient Codebook Allocation for an Arbitrary Set of Vector Quantizers" Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 43.7.1-43.7.4, Tampa, March 1985.

87. A. Gersho, "Adaptive Quantization," Proc. Seminar on Quantization and Adaptivity, pp. 41-49, Nice, France, May 1985.

88. J. H. Chen and A. Gersho, "Gain-Adaptive Vector Quantization for Medium-Rate Speech Coding," Conf. Rec., IEEE Int. Conf. on Commun., pp. 1456-1460, Chicago, June 1985.

89. V. Cuperman and A. Gersho, "Vector Predictive Coding of Speech at 16 Kb/s," IEEE Trans. on Commun., vol. COM-33, pp. 685-696, July 1985.

90. A. Gersho, "Vector Quantization: A New Direction in Source Coding," in Digital Commun., E. Biglieri and G. Prati, editors, Elsevier Science Publishers (North-Holland), 1986, pp. 267-281.

91. A. Gersho, "Principles of Quantization," in Quantization, P. Swaszek, editor, Van Nostrand Reinhold Co., pp. 7-13, New York, 1985. (reprint of 1978 paper)

92. A. Gersho, "Asymptotically Optimal Block Quantization," in Quantization, P. Swaszek, editor, Van Nostrand Reinhold Co., pp. 113-120, New York, 1985. (reprint of 1979 paper)

1986

93. Grant Davidson and A. Gersho, "Application of a VLSI Vector Quantization Processor to Real-Time Speech Coding," IEEE Journal on Selected Areas in Commun., vol. SAC-4, No. 1, pp. 112-124, January, 1986.

94. H. Koyama and A. Gersho, "A New Technique for Multipulse Excited LPC Speech Coding Using Vector Quantization," Proc. IEEE Phoenix Conf. on Computers and Commun., March, 1986.

**95. Juin-Hwey Chen and A. Gersho, "Vector Adaptive Predictive Coding of Speech at 9.6 kb/s" Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, vol. 3, pp.

96. P. Cappello, G. Davidson, A. Gersho, C. Koc, and V. Somayazulu, "A Systolic Vector Quantization Processor for Real-Time Speech Coding," Proc. IEEE Int. Conf. Acoust., Speech, Signal Proc., vol. 3, pp. 2143-2146, Tokyo, April 8-11, 1986.

97. G. Davidson and A. Gersho, "Complexity Reduction Methods for Vector Excitation Coding," Proc. IEEE Int. Conf. Acoust., Speech, Signal Proc., vol. 4, pp. 3055-3058, Tokyo, April 8-11, 1986.

98. De-Yuan Cheng and A. Gersho, "A Fast Codebook Search Algorithm for Nearest-Neighbor Pattern Matching," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, vol. 1, pp. 265-268, Tokyo, April 8-11, 1986.

99. R. Aravind and A. Gersho, "Low-Rate Image Coding with Finite-State Vector Quantization," Proc. IEEE Int. Conf.Acoust., Speech, Signal Processing, vol.1, pp. 137-140, Tokyo, April 8-11, 1986.

100. Hitoshi Koyama and A. Gersho, "Fully Vector-Quantized Multipulse LPC at 4800 BPS," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, vol. 1, pp. 445-448, Tokyo, April 8-11, 1986.

101. R. Aravind and A. Gersho, "Image Coding Below 0.5 Bits Per Pixel Using Vector Quantization," Proc. 1986 European Signal Processing Conf., (EUSIPCO 86), pp. 757-760, Amsterdam, September 1986.

102. A. Gersho, "Adaptive Vector Quantization," Annales des Telecommunications, vol. 41, no. 9-10, September-October 1986, pp. 470-480.

103. B. Ramamurthi and A. Gersho, "Nonlinear Space-Variant Post-Processing of Block Coded Images," IEEE Trans. Acoust., Speech, Signal Processing, vol. ASSP-34, No. 5, pp. 1258-1268, October 1986.

104. S. A. Townes, A. Gersho, T. P. Barnwell, III, R.C. R, G. D. Davidson, and J. H. Chen "4800 b/s Speech Compression Techniques for Mobile Satellite Systems," Proceedings 1986 IEEE Military Commun. Conf., pp.32.6.1-32.6.5, October 5-9, 1986, Monterey, California.

105. B. Ramamurthi and A. Gersho, "Classified Vector Quantization of Images," IEEE Trans. on Commun., vol. COM-34, no. 11, pp. 1105-1115, November, 1986.

1987

106. R. Aravind and A. Gersho "Image Compression Based on Vector Quantization with Finite Memory (invited paper), Optical Engineering, vol. 26, No. 7, pp. 570-580 July, 1987.

107. J. H. Chen, G. Davidson, A. Gersho, and K. Zeger "Speech Coding for the Mobile Satellite Experiment,"(invited paper), special session on Mobile Satellite Commun., Proceedings IEEE Inter. Conf. on Commun., pp 0756-0763, June 1987.

108. Kenneth Zeger and A. Gersho, "Real-Time Vector Predictive Coding of Speech," Proceedings IEEE Inter. Conf. on Commun., pp 1147-1152, June 1987.

109. Juin-Hwey Chen and A. Gersho "Covariance and Autocorrelation Methods for Vector Linear Prediction" Proc.IEEE Int. Conf. Acoust., Speech, Signal Proc., pp. 1545-1548, April 1987.

110. Juin-Hwey Chen and A. Gersho "Real-Time Vector APC Speech Coding at 4800 bps with Adaptive Postfiltering" Proc. Int. Conf. on Acoust., Speech, Signal Processing, pp. 2185-2188, April 1987.

111. Grant Davidson, Mei Yong, and A. Gersho "Real-Time Vector Excitation Coding of Speech at 4800 BPS" Proc. Int. Conf. on Acoust., Speech, Signal Processing, pp. 2189-2192, April 1987.

112. D. Jacques Vaisey and A. Gersho, "Variable Block Size Image Coding" Proc. Int. Conf. Acoust., Speech, Signal Processing, pp.1051-1054, April 1987.

113. Juin-Hwey Chen and A. Gersho, "Gain-Adaptive Vector Quantization with Application to Speech Coding," IEEE Trans. on Commun., COM-35, no.9, pp. 918-930, September, 1987.

114. A. Gersho, "Adaptive Equalization of Highly Dispersive Channels for Data Transmission," (reprint of 1969 paper) in Leon H. Sibul, editor, Adaptive Signal Processing, IEEE Press, New York, 1987, pp. 81-88.

115. Ioannis Dologlou and A. Gersho, "A Vector Companding Techniques for Fast Codebook Search in Waveform Coding of Speech," Proc. 1987 European Conf. on Circuit Theory and Design (ECCTD 87), pp. 133-138, September, 1987.

116. Kenneth Zeger and A. Gersho "Zero-Redundancy Channel Coding in Vector Quantisation," Electronics Letters, Vol. 23, No. 12, pp. 654-656, June 4, 1987.

117. W.Y. Chan, J.H. Chen, G. Davidson, and A. Gersho, "A Prototype 4800 bps Voice Terminal for NASA's Mobile Satellite Experiment," Conf. Record, IEEE Global Telecomm. Conf., Tokyo, Japan, November 1987, pp. 1135-1139.

1988

118. Yo-Sung Ho and A. Gersho, "Variable-Rate Multi-Stage Vector Quantization for Image Coding, "Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, April 1988, pp. 1156-1159.

119. Grant Davidson and A. Gersho, "Multiple-Stage Vector Excitation Coding of Speech Waveforms," Proc. IEEE Int.Conf. Acoust., Speech, Signal Processing, New York, April 1988, pp. 163-166.

120. Mei Yong, Grant Davidson and A. Gersho, "Encoding of LPC Spectral Parameters Using Switched-Adaptive Interframe Vector Prediction," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, New York, April 1988, pp. 402-405.

121. D. Chase and A. Gersho, "Real-Time VQ Codebook Generation Hardware for Speech Processing," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, New York, April 1988, pp. 1730-1733.

122. Jacques Vaisey and A. Gersho, "Simulated Annealing and Codebook Design," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, New York, April 1988, pp. 1176-1179.

123. A. Gersho and W.Y. Chan, "A Compact Hardware Speech Codec for NASA's Mobile Satellite Experiment," Proc. Speech Tech '88, New York, April 1988, pp. 322-325.

124. A. Gersho, W.Y. Chan, G. Davidson, J. H. Chen, and M. Yong, "Speech Coding at 4800 bps for Mobile Satellite Commun.," Proc. Mobile Satellite Conf., Pasadena, May 1988, pp. 485-490.

125. K. Zeger and A. Gersho "Vector Quantizer Design for Memoryless Noisy Channels," Proc. IEEE Inter. Conf. on Commun., Philadelphia, June 1988, pp. 1593-1597.

126. Yair Shoham and A. Gersho, "Efficient Bit Allocation for an Arbitrary Set of Quantizers," IEEE Trans. on Acoust., Speech, Signal Processing, vol. 36, no. 9, pp. 1445-1453. September 1988.

127. Jacques Vaisey and A. Gersho, "Variable Rate Image Coding Using Quad-Trees and Vector Quantization," in Signal Processing IV: Theories and Applications J. L. Lacoume, J. L. Lacoume, A. Chehikian, N. Martin, J. Malbos, editors, pp. 1133-1136, Elsevier, Grenoble, France, 1988.

128. G. Davidson, P. Cappello, and A. Gersho, "Systolic Architectures for Vector Quantization," IEEE Trans. Acoust., Speech, Signal Processing, vol. 36, no. 10, pp. 1651-1664, October, 1988.

129. X. Michel, R. Leonardi, and A. Gersho, "Unsupervised Segmentation of Texture Images" Proc. Int. SPIE Conf. on Visual Communication and Image Processing, vol. 1001, November 1988, pp. 582-590.

130. Mei Yong and A. Gersho, "Vector Excitation Coding with Dynamic Bit Allocation" Conf. Record, IEEE Global Telecomm. Conf., November 1988, pp. 290-294.

131. Yo-Sung Ho and A. Gersho, "Variable-Rate Contour-Based Interpolative Vector Quantization for Image Coding" Conf. Record, IEEE Global Telecomm. Conf., pp. 1890-1893, November 1988.

1989

132. Eyal Yair and A. Gersho, "The Boltzmann Perceptron: A Multi-Layered Feed-Forward Network Equivalent to the Boltzmann Machine," Advances in Neural Information Processing Systems: I, D. S. Touretsky, editor, Morgan Kaufmann Publishers, San Mateo, pp. 116-123, 1989.

133. Shihua Wang and A. Gersho, "Phonetically-Based Vector Excitation Coding of Speech at 3.6 kbps" Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, May 1989, pp. 49-52.

134. Mei Yong and A. Gersho, "Subband Vector Excitation Coding with Adaptive Bit Allocation, Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 743-746, May 1989.

135. Yo-Sung Ho and A. Gersho, "Classified Transform Coding of Image using Interpolative Vector Quantization," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, pp. 1890-1893, May 1989.

136. Kenneth Zeger and A. Gersho, "A Stochastic Relaxation Algorithm for Improved Codebook Design," Electronics Letters, Vol. 25, No. 14, July 6, 1989, pp. 896-898.

137. G. Davidson and A. Gersho, "Vector Excitation Speech or Audio Coder for Transmission or Storage," (Patent), U.S. Patent No. 4,868,867, September 19, 1989.

138. V. Cuperman, R. Pettigrew, Jey-Hsin Yao, A. Gersho, and John Shynk, "Low Delay Vector Excitation Coding of Speech at 16 Kbit/s Canadian Conf. on Commun., pp. 396-400, September 1989.

139. Masayuki Nishiguchi, Sharlene Gee, Wai-Yip Chan, and A. Gersho, "High Fidelity Audio Coding Using Vector Quantization" 1989 IEEE Workshop on Applications of Signal Processing to Audio and Acoust., (two-page summary), October, 1989.

140. Yo-Sung Ho and A. Gersho, "A Pyramidal Image Coder Using Contour-Based Interpolative Vector Quantization," Proc. SPIE Int. Symp. on Visual Commun. and Image Processing, vol. 1199, pp. 733-740, November 1989.

141. Yo-Sung Ho and A. Gersho, "Contour-Based Postprocessing of Encoded Images," Proc. Int. Symp. on Visual Communication and Image Processing, pp. 1440-1449, November 1989.

142. Yo-Sung Ho and A. Gersho, "A Variable Rate Image Coding Scheme Using Vector Quantization and Clustering Interpolation," Conf. Record, IEEE Global Telecomm. Conf., pp. 898-902, November 1989.

143. V. Cuperman, A. Gersho, R. Pettigrew J. S. Shynk, and J.-H. Yao, "Backward Adaptation Techniques for Low Delay Vector Excitation Coding of Speech," Conf. Record, IEEE Global Telecomm. Conf., pp. 1242-1246, November 1989.

1990

144. Eyal Yair and A. Gersho, "The Boltzmann Perceptron Network: A Soft Classifier" Journal of Neural Networks, pp. 203-221, March 1990.

145. Wai-Yip Chan, A. Gersho, "High Fidelity Audio Transform Coding with Vector Quantization" Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, Albuquerque, New Mexico, April 1990, pp. 1109-1112.

146. Eyal Yair, Kenneth Zeger, and A. Gersho, "Conjugate Gradient Methods for Designing Vector Quantizers," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, April 1990, pp. 245-248.

147. A. Gersho, "Asymptotically Optimal Block Quantization," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1979 paper), pp. 100-107.

148. A. Gersho, "On the Structure of Vector Quantizers," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1982 paper), pp. 108-117.

149. A. Gersho and B. Ramamurthi, "Image Coding Using Vector Quantization," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1982 paper), pp. 338-341.

150. A. Gersho and V. Cuperman, "Vector Quantization: A Pattern Matching Technique for Speech Coding," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1983 paper), pp. 2-8.

151. B. Ramamurthi and A. Gersho, "Image Vector Quantization with a Perceptually-Based Cell Classifier," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1984 paper), pp. 344-347.

152. G. Davidson, R. Aravind, T. Stanhope, and A. Gersho, "Real-Time Speech Compression with a VLSI Vector Quantization Processor," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1985 paper), pp. 495-498.

153. V. Cuperman and A. Gersho, "Vector Predictive Coding of Speech at 16 Kb/s," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1985 paper), pp. 300-311.

154. Juin-Hwey Chen and A. Gersho "Real-Time Vector APC Speech Coding at 4800 bps with Adaptive Postfiltering" in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1987 paper), pp. 517-520.

155. Yair Shoham and A. Gersho, "Efficient Bit Allocation for an Arbitrary Set of Quantizers," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990 (reprint of 1988 paper), pp. 289-296.

156. G. Davidson, P. Cappello, and A. Gersho, "Systolic Architectures for Vector Quantization," in Vector Quantization, H. Abut, editor, IEEE Press, New York, 1990, pp. 499-5122, (reprint of 1988 paper), pp. 499-512.

157. A. Gersho and T.C. Jedrey, "Performance of a Low Data Rate Speech Codec for Land Mobile Satellite Communications," Proc. Mobile Satellite Conf., Ottawa, June 1990, pp. 647-653.

158. A. Gersho, "Speech Coding" in Speech Analysis-Synthesis and Man-Machine Speech Communications for Air Operations, Proc. AGARD Lecture Series 170, Paris, pp. 3.1-3.14, Neuilly sur Seine, France: AGARD, 1990.

159. A. Gersho, "Optimal Nonlinear Interpolative Vector Quantization," IEEE Trans. Commun., vol. COM-38, no. 9, pp. 1285-1287, September, 1990.

160. Eyal Yair and A. Gersho, "Maximum A Posteriori Decision and Evaluation of Class Probabilities by Boltzmann Perceptron Classifiers," Proc. IEEE, Special Issue on Neural Networks, vol. 78, No. 8, October 1990, pp. 1620-1628.

161. A. Gersho and S. Wang, "Recent Trends and Techniques in Speech Coding," Proc. 24th Asilomar Conf. Circuits, Systems, and Computers, Pacific Grove, CA, November 1990, pp. 634-638.

162. S.W. Wu and A. Gersho, "Optimal Block-Adaptive Image Coding with Constrained Bit-Rate," Proc. 24th Asilomar Conf. Circuits, Systems, and Computers, Pacific Grove, CA, November 1990, pp. 336-340.

163. S. Gupta and A. Gersho, "Nonlinear Predictive Vector Quantization of Multispectral Imagery," Proc. 24th Asilomar Conf. Circuits, Systems, and Computers, Pacific-Grove, CA, November 1990, pp. 331-335.

164. W.Y. Chan and A. Gersho, "Enhanced Multistage Vector Quantization with Constrained Storage," Proc. 24th Asilomar Conf. Circuits, Systems, and Computers, Pacific Grove, CA, November 1990, pp. 659-663.

165. S. Wang, E. Paksoy, and A. Gersho, "Performance of Nonlinear Prediction of Speech," Proc. Int. Conf. Spoken Language Processing, Kobe, Japan, November 1990, pp. 29-32.

166. S. Wang and A. Gersho, "Improving the Excitation for Phonetically-Segmented VXC Speech Coding Below 4 KBPS," Conf. Record, IEEE Global Telecomm. Conf., San Diego, CA, 1990, vol. 2, pp. 946-950.

167. Juin-Hwey Chen and A. Gersho, "Vector Adaptive Predictive Coder for Speech and Audio" United State Patent, #4,969,192, November 6, 1990.

168. Kenneth Zeger and A. Gersho, "Pseudo-Gray Coding" IEEE Trans. on Communications, vol. 38, no. 12 December 1990, pp. 2147-2158.

1991

169. Bishnu S. Atal, V. Cuperman, and A. Gersho, "ADVANCES IN SPEECH AND AUDIO CODING," 450 pages, Kluwer Academic Publishers, 1991.

170. Mei Yong and A. Gersho, "Efficient Encoding of the Long-Term Predictor in Vector Excitation Coders," in Advances in Speech Coding, B.S. Atal, V. Cuperman, and A. Gersho, editors, Kluwer Academic Publishers, 1991, pp. 329-338.

171. Shihua Wang and A. Gersho, "Phonetic Segmentation for Low Rate Speech Coding" in Advances in Speech Coding, B.S. Atal, V. Cuperman, and A. Gersho, editors, Kluwer Academic Publishers, 1991, pp. 225-234.

172. V. Cuperman, A. Gersho, R. Pettigrew, J. S. Shynk, and J.-H. Yao, "Backward Adaptive Analysis-by-Synthesis Configurations for Low-Delay Speech Coding" in Advances in Speech Coding, Kluwer Academic Publishers, 1991, pp. 13-23.

173. W. Y. Chan and A. Gersho, "Constrained Storage Quantization of Multiple Vector Sources by Codebook Sharing," IEEE Trans. Commun., vol. COM-38, no. 12, January, 1991, pp. 11-13.

174. S.-W. Wu and A. Gersho, "Image compression for digital video tape recording with high-speed playback capability," Conf. Rec. SPIE Conf. on Image Processing, Santa Clara, CA, February 1991, vol. 1452, pp. 352-363.

175. S.W. Wu and A. Gersho, "Rate-Constrained Optimal Block-Adaptive Coding for Digital Tape Recording of HDTV," IEEE Trans. Video Technology in Circuits & Systems, March 1991, vol. 1, no. 1, pp. 100-112.

176. Eyal Yair and A. Gersho, "Decision Making and Pattern Classification by Stochastic and Deterministic Neural Networks," in Neural Networks: Concepts, Applications and Implementations, vol. III, P. Antognetti and V. Milutinovic, editors, Prentice-Hall, Englewood Cliffs, N.J. 1991.

177. Wai-Yip Chan and A. Gersho, "Constrained-Storage Vector Quantization in High Fidelity Audio Transform Coding," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, Toronto, Canada May 1991, pp. 3597-3600.

178. Kenneth Zeger and A. Gersho, "A Parallel Processing Algorithm for Vector Quantizer Design Based on Subpartitioning," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, Toronto, Canada, May 1991. pp 1141-1143.

179. Shihua Wang, Andrew Sekey and A. Gersho, "Auditory Distortion Measure for Speech Coding," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, Toronto, Canada, May 1991. pp. 493-497.

180. A. Gersho, "Linear Prediction Techniques in Speech Coding," in Adaptive Signal Processing L.D. Davisson and G. Longo, editors, Springer-Verlag, New York, pp. 69-95, 1991.

181. Wai-Yip Chan and A. Gersho, "Novel Vector Quantization Techniques in High Fidelity Audio Coding," Conf. Rec., 1991 IEEE Workshop on Speech Coding for Telecommunications, (Summary) pp. 21-22, September 1991.

182. Shihua Wang, Andrew Sekey, and A. Gersho, "Vector Excitation Coding of Speech with An Auditory Distortion Measure,"Conf. Rec., 1991 IEEE Workshop on Speech Coding for Telecommunications, (Summary) pp. 45-46, September 1991.

183. Shihua Wang and A. Gersho, "Interframe Coding of LPC Parameters with Band-Splitting VQ," Conf. Rec., 1991 IEEE Workshop on Speech Coding for Telecommunications, (Summary) pp. 31-32, September 1991.

184. Jey-Hsin Yao, John J. Shynk and A. Gersho, "Low Delay Speech Coding at 8 kbit/s," Conf. Rec., 1991 IEEE Workshop on Speech Coding for Telecommunications, (Sum mary) pp. 1-2, September 1991.

185. Siu-Wai Wu and A. Gersho, "HDTV Compression with Vector Quantization of Transform Coefficients," 1991 SPIE Conf. Visual Commun. Image Processing, Boston, pp. 73-84, November, 1991.

186. Siu-Wai Wu and A. Gersho, "Enhancement of Transform Coding by Nonlinear Interpolation," 1991 SPIE Conf. Visual Commun. Image Processing, Boston, pp. 487-498, November, 1991.

187. Smita Gupta and A. Gersho, "Image Coding Using Block Adaptive Scalar Prediction with Vector Quantization," 1991 SPIE Conf. Visual Commun. Image Processing, Boston, pp. 179-189, November, 1991.

188. Jey-Hsin Yao, John J. Shynk and A. Gersho, "Low Delay Vector Excitation Coding of Speech at 8 kbit/s," Conf. Record, IEEE Global Telecomm. Conf., Phoenix, pp. 695-699, December 1991.

1992

189. A. Gersho, S. Wang, & K. Zeger, "Vector Quantization Techniques in Speech Coding," in Advances in Speech Signal Processing, S. Furui and M.M. Sondhi, eds., Marcel Dekker, New York, pp. 49-84, 1992.

190. A. Gersho, "Speech Coding" in "Digital Speech Processing: Speech Coding, Synthesis, and Recognition," N. Ince, editor, Kluwer Academic Publishers, 1992, pp. 73-100.

191. A. Gersho and Robert M. Gray, "VECTOR QUANTIZATION AND SIGNAL COMPRESSION," 750 pp., Kluwer Academic Publishers, 1992.

192. V. Cuperman, A. Gersho, Robert Pettigrew and Jey-Hsin Yao, "Low Delay Vector Excitation Coding of Speech at 16 kb/s," IEEE Trans. on Comm., vol. 40, pp. 129-139, January

193. Siu-Wai Wu and A. Gersho, "Improved Decoder for Transform Coding with Application to the JPEG Baseline System" IEEE Trans. Commun., vol. 40, pp. 252-255, February 1992.

194. Ken Zeger, Jacques Vaisey, & A. Gersho "Globally Optimal Vector Quantizer Design by Stochastic Relaxation," IEEE Trans. Signal Processing, vol. 40, no.2, pp. 310-322, February 1992.

195. Eyal Yair, Kenneth Zeger, & A. Gersho "Competitive Learning and Soft Competition for Vector Quantizer Design," IEEE Trans. Signal Processing, vol. 40, no. 2, pp. 294-309, February 1992.

196. Siu-Wai Wu and A. Gersho, "Nonlinear Interpolative Decoding of Standard Transform Coded Images and Video" Proc. SPIE Conference Image Processing Algorithm and Techniques San Jose, February 1992, pp. 88-99.

197. Eyal Yair and A. Gersho, "Maximum A Posteriori Decision and Evaluation of Class Probabilities by Boltzmann Perceptron Classifiers," (reprint of 1990 paper) in NEURAL NETWORKS: Theoretical Foundations & Analysis Neural Networks: Theoretical Foundations & Analysis, Clifford Lau, editor, IEEE Press, New York, 1992, pp. 89-297.

198. Smita Gupta and A. Gersho, "Joint Motion Compensated Prediction and Interpolation of Video Sequences," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, San Francisco, vol. 3, pp. 457-460, March 1992.

199. Jey-Hsin Yao, John J. Shynk, and A. Gersho, "Low-Delay VXC at 8 Kb/s with Interframe Coding," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, San Francisco, vol. 1, pp. 45-48, March 1992.

200. Shihua Wang and A. Gersho, Improved Phonetically-Segmented Vector Excitation Coding at 3.4 Kb/s," Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, San Francisco, vol. 1, pp. 349-352, March 1992.

201. Smita Gupta and A. Gersho, "Feature Predictive Vector Quantization of Multispectral Images," IEEE Trans. Geoscience and Remote Sensing, vol. 30, no. 3, pp. 491-501, May 1992.

202. Wai-Yip Chan and A. Gersho, "Generalized Product Codes: A Framework for the Design of Structured Vector Quantizers," Proc. IEEE Int. Symposium on Circuits and Systems, San Diego, pp. 2272-2275, San Diego, May 1992.

203. Shihua Wang, Andrew Sekey, and A. Gersho, "An Objective Measure for Predicting Subjective Quality of Speech Coders," IEEE J. Selected Areas in Commun., vol. SAC-10, June 1992, pp. 819-829.

204. A. Gersho and E. Paksoy, "An Overview of Variable Rate Speech Coding for Cellular Networks" Proc. 1992 IEEE-Inter. Conf. Selected Topics in Wireless Commun., Vancouver, pp. 172-175, June 1992.

205. Jacques Vaisey and A. Gersho "Image Compression with Variable Block Size Segmentation," IEEE Trans. Signal Processing, vol. 40, no. 8, pp. 2040-2060, August 1992.

206. Wai-Yip Chan and A. Gersho, "A Generalized Product-Code Model for Structured Vector Quantization of Audio and Visual Signals," in SIGNAL PROCESSING VI: Theories and Applications, J. Vandewalle, R. Boite, M. Moonen, A. Oosterlinck, editors, pp. 1235-1238 Elsevier Science Publishers, 1992.

207. Wai-Yip Chan, Smita Gupta, and A. Gersho "Enhanced Multistage Vector Quantization by Joint Codebook Design," IEEE Trans. on Commun., vol. 40, November, 1992, pp. 1693-1697.

208. E. Paksoy, Wai-Yip Chan, and A. Gersho, "Vector Quanti zation of Speech LSF Parameters with Generalized Product Codes," *Proc. Int. Conf. Spoken Language Processing*, Banff, Canada, November 1992, pp. 33-36.

209. Siu-Wai Wu and A. Gersho, "Lapped Block Decoding for Vector Quantization of Images," *Proc. SPIE Conf. Visual Commun. & Image Processing* '92 Boston, November 1992, pp. 488-499.

210. B. Ramamurthi and A. Gersho, "Classified Vector Quantization of Images," (reprint of 1986 paper), in *Selected Papers on Image Coding and Compression*, Majid Rabbani, editor, SPIE Milestone Series, SPIE Optical Engineering Press, 1992, pp. 372-382.

211. Bishnu S. Atal, V. Cuperman, and A. Gersho, "*Speech And Audio Coding For Wireless And Network Applications*," 296 pages, Kluwer Academic Publishers, 1993.

212. A. Gersho and E. Paksoy, "Variable Rate Speech Coding for Cellular Networks" in Bishnu S. Atal, V. Cuperman, and A. Gersho, editors, "*Speech and Audio Coding for Wireless and Network Applications*," Kluwer Academic Publishers, 1993, pp. 77-84.

213. Shihua Wang, E. Paksoy, and A. Gersho, "Product Code Vector Quantization of LPC Parameters," Bishnu S. Atal, V. Cuperman, and A. Gersho, editors, "*Speech and Audio Coding for Wireless and Network Applications*," Kluwer Academic Publishers, 1993, pp. 251-258.

214. Wai-Yip Chan and A. Gersho, "High Fidelity Audio Coding with Generalized Product Code VQ," Bishnu S. Atal, V. Cuperman, and A. Gersho, editors, "*Speech and Audio Coding for Wireless and Network Applications*," Kluwer Academic Publishers, 1993, pp. 153-159.

215. A. Gersho, "Optimal Vector Quantized Nonlinear Estimation," *Proc. IEEE Inter. Symposium on Information Theory*, (Summary) San Antonio, January, 1993, pp. 170.

216. Wai-Yip Chan and A. Gersho, "Source Clustering for Codebook Compression," *Proc. IEEE Inter. Symposium on Information Theory*, (Summary) January 1993, pp. 335.

217. Siu-Wai Wu and A. Gersho "Joint Estimation of Forward/Backward Motion Vectors for MPEG Interpolative Prediction," *Proc. Int. Picture Coding Symposium*, Lau-zanne, Switzerland, March 1993, pp. 14.3.1-14.3.2.

218. E. Paksoy, K. Srinivasan, A. Gersho, "Variable Rate Speech Coding with Phonetic Segmentation," *Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing, Minneapolis*, vol. 2, April 1993, pp. 155-158.

219. Siu-Wai Wu and A. Gersho "Rate-Constrained Picture-Adaptive Quantization for JPEG Baseline Coders," *Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing*, Minneapolis, vol. 5, April 1993, pp. 389-392.

220. Siu-Wai Wu and A. Gersho, "Enhanced Video Compression with Standardized Bit Stream Syntax," *Proc. IEEE Int. Conf. Acoust., Speech, Signal Processing*, Minneapolis, vol. 1, April 1993, pp. 103-106.

221. Wai-Yip Chan and A. Gersho, "Joint Codebook Design for Summation Product Code Vector Quantizers," *Proc. Data Compression Conference*, April 1993, pp. 42-51.

222. Jey-Hsin Yao, John J. Shynk, and A. Gersho, "Low-Delay speech coding with adaptive interframe pitch tracking," *Proc. IEEE Int. Conf. on Communication*, Geneva, May 1993

223. D. McLaren and A. Gersho, "Enhanced Multigeneration Capability for Digital HDTV Tape Recorders" *Electronics Letters*, Vol. 29, No. 13, June 1993, pp. 1213-14.

224. D. McLaren and A. Gersho, "A New DVTR Coding Scheme for HDTV Recording and High-Quality Variable Speed Playback," *Proc. IEEE Int. Conf. Consumer Electronics*, pp 16-17, June, 1993.

225. Siu-Wai Wu and A. Gersho, "Lapped Vector Quantization of Images,*" J. Optical Eng.*, vol. 32, no. 7, pp. 1489-1495, July 1993.

226. D. McLaren and A. Gersho "A Multiresolution HDTV Compression Algorithm for Video Tape Recording," *J. Optical Eng*., vol. 32, no. 7, pp. 1549-1558, July 1993.

227. D. McLaren and A. Gersho, An HDTV Compression Scheme for Production-Quality Recording and High-Performance Shuttle Operation," *IEEE Trans. Consumer Electronics*, vol. 39, no.3, August 1993, pp. 175-185.

228. V. Cuperman and A. Gersho "Low Delay Speech Coding," *Speech Communications*, vol. 12, no. 2, June 1993, pp. 193-204.

229. E. Paksoy and A. Gersho "A Variable Rate speech Coding Algorithm for Cellular Networks," *Proc. IEEE Workshop on Speech Coding for Telecommunications*, October 1993, pp. 109-110.

230. K. Srinivasan and A. Gersho "Voice Activity Detection for Digital Cellular Networks," *Proc. IEEE Workshop on Speech Coding for Telecommunications,* October 1993, pp. 85-86.

231. Smita Gupta and A. Gersho, "Reduced Complexity Subpixel Block Motion Estimator," *Proc. SPIE Int. Symp. on Visual Commun. and Image Processing,* November 1993, pp. 408-419.

232. Smita Gupta and A. Gersho, "Multistage Vector Quantization of Multispectral Imagery with Greedy Bit allocation," *Proc. SPIE Int. Symp. on Visual Commun. and Image Processing*, November 1993, pp. 890-901.

233. S. Gupta, A. Gersho, and A. Tescher, " *Recent Trends in Compression of Multispectral Imagery*," (invited paper), Proc. 27th Asilomar Conf. Circuits, Systems, and Computers, Pacific Grove, CA, November 1993.

234. W.Y. Chan and A. Gersho, "Structured Vector Quantizers as Generalized Product Codes," in *Coding and Quantization*, R. Calderbank, G. D. Forney, Jr. and N. Moeyari, American Mathematical Society Press, Providence, Rhode Island, 1993, pp. 111-119,

1994

235. E. Paksoy and A. Gersho, "Variable Rate Speech Coding for Multiple Access Wireless Networks," *Proc. Mediterranean Electrotechnical Conference* (MELECON'94), Antalya, Turkey, vol. 1, pp. 47-50, April, 1994.

236. A. Das, Ajit V. Rao, and A. Gersho, "Variable Dimension Vector Quantization of Speech Spectra for Low Rate Vocoders,*" IEEE Data Compression Conference*, Snowbird, Utah, pp. 420-429, April 1994.

237. K. Rose, D. Miller, and A. Gersho, "Entropy Constrained Tree-Structured Vector Quantizer Design by the Principle of Minimum Cross Entropy," *IEEE Data Compression Conference*, Snowbird, Utah, pp. 12-21, April 1994.

238. W.Y. Chan and A. Gersho, "Generalized Product Code Vector Quantization: A Family of Efficient Techniques for Signal Compression" (invited paper) *Digital Signal Processing*, vol. 4, no. 2, pp. 95-126, April 1994.

239. A. Das and A. Gersho, "A Variable Rate Natural Quality Parametric Coder at 1.5 kb/s" *IEEE Intl. Conf. on Communications*, New Orleans, vol. 1, pp. 216-220, May 1994.

240. T. Kawashima, V. Sharma, and A. Gersho, "Network Control of Speech Bit Rate for Enhanced Cellular CDMA Performance," *IEEE Intl. Conf. on Communications*, New Orleans, vol. 1, pp. 216-220, May, 1994.

241. A. Gersho, "Advances in Speech and Audio Compression" (invited paper), *Proc. IEEE*, vol. 82, no. 6, pp. 900-918, June 1994.

242. K. Zeger and A. Gersho, "How Many Points in Euclidean Space can have a Common Nearest Neighbor ?" in *Proc. IEEE Inter. Symp. Information Theory,* Trondheim, Norway, 1994.

243. A. Das and A. Gersho, "Multiband Spectral Coding of Speech at 2.4 Kb/s with Phonetic Classification and Variable Dimension VQ," *Proc. European Signal Processing Conf.*, Edinburgh, Scotland, pp. 943-946, September 1994.

244. A. Gersho and E. Paksoy, "Variable-Rate Speech Coding,"(invited plenary paper) *Proc. European Signal Processing Conf.*, Edinburgh, Scotland, September 1994.

245. S.-W Wu and A. Gersho, "Joint Estimation of Forward and Backward Motion Vectors for Interpolative Prediction of Video," *IEEE Trans. Image Processing*, vol. 3, no. 5, September 1994, pp. 684-687.

246. E.Paksoy, K. Srinivasan, and A. Gersho, "Variable Bit Rate CELP Coding of Speech with Phonetic Classification," *European Trans. Telecommunications*, vol. 5, no. 5, pp 591-602, Sept.-Oct. 1994

247. A. Das, Ajit V. Rao, and A. Gersho, "Enhanced Multiband ExCoding of Speech at 2.4 Kb/s with Discrete All-Pole Modeling of Spectra," *Conf. Record, IEEE Global Telecomm*. Conf., pp. 863-866, November 1994. San Francisco, 1994.

248. K. Zeger and A. Gersho, "Number of Nearest Neighbors in a Euclidean Code," *IEEE Trans. Inform. Theory*, vol. 40, no. 5, pp. 1647-1649, September, 1994.

1995

249. Juin-Hwey Chen and A. Gersho, "Adaptive postfiltering for quality enhancement of coded speech" *IEEE Trans. Speech Audio Processing*, vol. 3, no. 1, pp. 59-71, January 1995.

250. S. Ramakrishnan, K. Rose, and A. Gersho, "Constrained-Storage Vector Quantization with a Universal Codebook," *Proc. Data Compression Conference*, pp. 42-51, April, 1995.

251. A. Das and A. Gersho, "Variable Dimension Spectral Coding of Speech at 2400 bps and Below With Phonetic Classification," *Proc. IEEE Conf. Acoust., Speech, Signal Processing*, Detroit, vol. 1, pp. 492-495, May 1995.

252. R. Hagen, E. Paksoy, and A. Gersho " Variable Rate Spectral Quantization for Phonetically Classifed CELP Coding," *Proc. IEEE Int. Conf. on Acoust., Speech, and Sig. Proc.*, Detroit, vol. 1, pp. 748-751, May 1995.

253. D. Miller, A. Rao, K. Rose, and A. Gersho. "An Information-Theoretic Approach to Optimal Design of Statistical Classifiers," (abstract) in *Conf. Digest, Classification Society of North America*, Annual Meeting, Denver, June 1995.

254. Ajit Rao, D. Miller, Kenneth Rose, and A. Gersho, "An Information-Theoretic Approach for Statistical Regression with Model Growth by Bifurcations," in *Proc. 27th Annual Symposium Interface of Computer Science and Statistics*, (Interface '95), Pittsburgh, June 1995.

255. A. Rao, D. Miller, K. Rose, and A. Gersho. "GeneraLized Vector Quantization: Jointly Optimal Quantization and Estimation," Proc. 1995 *IEEE Inter. Symposium on Information Theory*, p. 432, (Summary) September 1995.

256. D. Miller, A. Rao, K. Rose, and A. Gersho. "An Information-Theoretic Framework for Optimization with Application to Supervised Learning," *Proc. 1995 IEEE Inter. Symposium on Information Theory*, (Summary) p. 257, September 1995.

257. A. Das and A. Gersho, "Multimode Spectral Coding of Speech at 2400 bps and Below," *Proc. IEEE Workshop on Speech Coding for Telecommunications*, Sept. 1995.

258. J.M. De Martin and A. Gersho, "Mixed-Domain Coding andInterpolation of Voiced Speech," *Proc. IEEE Workshop on Speech Coding for Telecommunications*, Sept. 1995.

259. D. Miller, A. Rao, K. Rose, and A. Gersho. "A Maximum Entropy Approach for Optimal Statistical Classification," *IEEE Workshop on Neural Networks for Signal Processing*, 1995.

260. M. Iwadare and A. Gersho, "Audio Coding with Auditory-Model-Based Psychoacoustic Analysis," *Proc. 1995 Society Conference of IEICE*, (Institute of Electronics, Information and Communication Engineers), Chuo University, Tokyo, Japan, Sept. 5-8, 1995

261. A. Gersho, S. Gupta, and S.-W. Wu, "Vector Quantization Techniques in Image Compression," in *Handbook of Visual Communications* M. Hang and J. Wood, editors, Academic Press, 1995.

262. A. Das, E. Paksoy, and A. Gersho, "Multimode and Variable Rate Coding of Speech," in *Speech Coding and Synthesis*, W.B. Kleijn and K.K. Paliwal, eds, Elsevier Press, pp. 257-288, 1995.

263. A. Gersho, "Concepts and Paradigms in Speech Coding," in *New Advances and Trends in Speech Recognition and Coding*, A.J. Rubio, editor, Springer Verlag, 1995.

264. D. Miller, A. Rao, K. Rose, and A. Gersho. "An Information-Theoretic Learning Algorithm for Neural Network Classification" to appear, *Proc. Conf. on Neural Information Processing Systems*: Natural and Synthetic,(NIPS 95), Denver, Nov. 28-30,1995.

1996

265. K. Rose, D. Miller, and A. Gersho. "Entropy-Constrained Tree-structured Vector Quantizer Design" *IEEE Transactions on Image Processing* (special issue on Vector Quantization), Feb. Vol. 5, no. 2, pp. 393-398.

266. M. Serizawa and A. Gersho, "Joint optimization of LPC and closed-loop pitch parameters in CELP coders" *Proc. of 1996 Spring Meeting of the Acustical Society of Japan*, 1-4-19, Tokyo, March 1996.

267. T. Kawashima, V. Sharma, and A. Gersho, "Capacity Enhancement of Cellular CDMA by Traffic-Based Control of Speech Bit Rate," *IEEE Trans. on Vehicular Technology*, Aug., vol. 45, no. 3, pp. 543-550.

268. Ajit Rao, D. Miller, Kenneth Rose, and A. Gersho, "A Generalized VQ Method for Combined Compression and Estimation," *Proc. IEEE Int. Conf. on Acoust., Speech, and Sig. Proc.*, vol. 4, pp. 2032-2035, Atlanta, 1996.

269. J.C. De Martin and A. Gersho, "Mixed-domain coding of speech at 3 kb/s," *Proc. IEEE Int. Conf. on Acoust., Speech, and Sig. Proc.*, Atlanta 1996.

270. A. Das and A.Gersho, Multimode Spectral Coding of Speech for Satellite Communications," to appear Proc. Eusipco 96, Trieste, Italy, Sept. 1996

271. A. Das, A.V. Rao, and A. Gersho, "Variable Dimension Vector Quantization," *IEEE Signal Processing Letters*, vol. 3, no. 7, pp. 200-202, July 1996.

272. D. Miller, A. Rao, K. Rose, and A. Gersho, "A Global Optimization Technique for Statistical Classifier Design," *IEEE Trans. Signal Processing*, Dec., vol. 44, no. 12, pp. 3108-3122

1997

273. A. Ubale and A. Gersho, "Multi-Band CELP Wideband Speech Coder," *Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing*, Munich, pp. 1367-1370

274. E. Erzin, A. Kumar, and A. Gersho, "Natural Quality Variable-Rate Spectral Speech Coding Below 3 kbps," *Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing*, Munich, pp.1579-1582

275. A. Rao, D. Miller, K. Rose and A. Gersho, "Deterministically Annealed Mixture of Experts Models for Statistical Regression," *Proc. IEEE Int. conf. on Acoustics, Speech and Signal Processing*, Munich pp. 3201-3204, ? 1997

276. A.V. Rao, K. Rose, and A. Gersho, "A Deterministic Annealing Approach to Discriminative Hidden Markov Model Design," *IEEE Workshop on Neural Networks and Signal Processing*, pp. 266-275 Sept. 1997

277. E. Shlomot, V. Cuperman and A. Gersho, "Hybrid Coding of Speech at 4 Kbps," *Proc. 1997 IEEE Workshop on Speech Coding*, Pocono Manor, PA, pp. 37-38, Sept., 1997

278. A. Ubale and A. Gersho, "Multi-Band CELP Coding of Speech and Music," *Proc. 1997 IEEE Workshop on Speech Coding*, Pocono manor, PA, pp. 101-102, Sept. 1997

279. A. Kumar, and A. Gersho, "Voiced Speech Synthesis with a Nonlinear Glottal Model," *Proc. 1997 IEEE Workshop on Speech Coding*, Pocono manor, PA, pp. 3-4, Sept.

280. Jean-Luc Dugelay and A. Gersho, "Enhanced Fractal Image Coding by Combining IFS and VQ," *Proc. 1997 International Conference on Image Processing*, Santa Barbara, CA, pp. 726-729, Oct. 1997

281. A. Rao, D. Miller, K. Rose and A. Gersho, "Mixture of Experts Regression Modeling by Deterministic Annealing," *IEEE Transactions on Signal Processing*, Vol. 45, No. 11, pp. 2811-2820, Nov. 1997

282. A. Rao, K. Rose and A. Gersho, "Design of Robust HMM Speech Recognizers Using Deterministic Annealing," *Proc. Automatic Speech Recognition and Understanding Workshop*, Santa Barbara, CA, Dec. pp. 466-473

283. A. Kumar and A. Gersho. "LD-CELP Speech Coding with Nonlinear Prediction," *IEEE Signal Processing Letters*, Vol. 4, pp. 89-91, April 1997

1998

284. Siu-Wai Wu, and A. Gersho, "Additive Vector Decoding of Transform Coded Images," IEEE Transactions on Image Processing, Vol. 7, No. 6, pp. 794-803 June 1998

285. S. Ramakrishnan, K. Rose, and A. Gersho, "Constrained-Storage Vector Quantization with a Universal Codebook," IEEE Transactions on Image Processing, Vol. 7, No. 6, pp. 785-793, June 1998

286. A. Rao, K. Rose, and A. Gersho, "Deterministically Annealed Design of Speech Recognizers and its Performance on Isolated Letters," *IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, May 1998.

287. A. Ubale and A. Gersho, "A Low Delay Wideband Speech Coder at 24 kbps," *IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, May 1998

288. E. Shlomot, V. Cuperman and A. Gersho, "Combined Harmonic and Waveform Coding of Speech at Low Bit Rates," *IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, May 1998.

1999

289. A. Rao, D. Miller, K. Rose and A. Gersho, "A Deterministic Annealng Approach for Parsimonious Design of Piecewise Regression Models," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 21, No.2, Feb. 1999.

290. M. Serizawa and A. Gersho, "Joint Optimization of LPC and Closed Loop Pitch Parameters in CELP Coders," *IEEE Signal Processing Letters*, Vol.6, No. 3, March 1999.

291. C. Li, V. Cuperman, and A. Gersho, "Robust Closed-Loop Pitch Estimation for Harmonic Coders by Time Scale Modification**,"** *Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing***,** May 1999.

292. A. Das and A. Gersho, "Low-Rate Multimode Multiband Spectral Coding of Speech," *Int'l. J. of Speech Technology, v.* 2, pp. 317-327, May 1999.

293. A. Aggarwal, V. Cuperman, K. Rose and A. Gersho, "Perceptual Zerotrees for Scalable Wavelet Coding of Wideband Audio," Proc. 1999 IEEE Workshop on Speech Coding, Pocono manor, PA, pp. 16-18, Jun. 1999.

294. R. Hagen, E. Paksoy, and A. Gersho, "Voicing-Specific LPC Quantization for Variable Rate Speech Coding**,"** *IEEE Trans. of Speech and Audio Processing***,** Vol. 7 No. 5, pp.485-493, Sept. 1999.

295. O. Gottesman and A. Gersho, "Enhanced Waveform Interpolative Coding at 4 kbps," *IEEE Workshop on Speech Coding Proceedings*, pp. 90-92, 1999, Finland.

296. O. Gottesman and A. Gersho, "Enhanced Analysis-by-Synthesis Waveform Interpolative Coding at 4 kbps*," EUROSPEECH '99*, pp. 1443-1446, 1999, Hungary.

2000

297. Kazuhito Koishida, Vladimir Cuperman, Allen Gersho, "A 16 Kbit/S Bandwidth-Scalable Coder with G.729 Standard," *Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, vol.2, 2000, pp. 149-52, Istanbul, June 2000.

298. Kazuhito Koishida, Vladimir Cuperman, Allen Gersho "A 1200 bps speech coder based on MELP," *IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, pp.1375-1378, Istanbul, June 2000.

299. O. Gottesman and A. Gersho, "High Quality Enhanced Waveform Interpolative Coding at 2.8 kbps," *IEEE Intl. Conf. on Acoustics, Speech and Signal Processing*, pp. 1363-1366, Istanbul, June 2000.

Tian Wang., K. Koishida K., V. Cuperman, A. Gersho, J. S Collura "A 1200 bps speech coder based on MELP", *IEEE International Conference on Acoustics, Speech, and Signal Processing.* vol.3, 2000, pp.1375-8 vol.3.

Etemoglu CO. Cuperman V. Gersho A., Speech coding with an analysis-by-synthesis sinusoidal model," *Proceedings IEEE International Conference on Acoustics, Speech, and Signal Processing.* Part vol.3, 2000, pp.1371-4, vol.3.

300. O. Gottesman and A. Gersho, " Enhancing Waveform Interpolative Coding with Weighted REW Parametric Quantization," in *Proc. IEEE Workshop on Speech Coding*, pp. 50-52, September 2000.

301. Kazuhito Koishida, Allen Gersho, "Enhancing MPEG-4 CELP by jointly optimized inter/intra-frame LSP predictors," *Proc. IEEE Workshop on Speech Coding*, pp.90-92, Delavan, Sept. 2000.

302. Koishida K., Linden J., Cuperman V., Gersho A., "Enhancing MPEG-4 CELP by jointly optimized inter/intra-frame LSP predictors". *Proc. IEEE Workshop on Speech Coding,.* 2000, pp.90-2

303. V. Cuperman V., A. Gersho. J. Linden, A. Rao, Tung-Chiang Yang., S. Ahmadi, R. Heidari, and Fenghua Liu, "A novel approach to excitation coding in low-bit-rate high-quality CELP coders. *IEEE Workshop on Speech Coding.* Proceedings. 2000, pp.14-16. Wisconsin.

304. Cuperman V. Gersho A. Linden J. Rao A. Tung-Chiang Yang. Ahmadi

S. Heidari R. Fenghua Lui, "Adaptive window excitation coding in low-bit-rate CELP coders," *Proceedings of EUSIPCO 2000. Tenth European Signal Processing Conference*, vol.3, pp.1317-20 vol.3. Tampere, Finland. 2000.

2001

305. Eyal Shlomot and Allen Gersho, "Hybrid Coding: Combined Harmonic and Waveform Coding of Speech at 4 kb/s", *IEEE Trans. Speech and Audio Processing*, Vol. 9, no. 6, Sept. 2001, pp. 632-646.

306. Oded Gottesman and Allen Gersho, "Enhanced waveform interpolative coding at low bit-rates," *IEEE Transactions on Speech & Audio Processing,* vol.9, no.8, Nov. 2001, pp.786-98.

2002

307. Tian Wang, Kazuhito Koishida, Vladimir Cuperman, Allen Gersho, and John S. Collura A 1200/2400 BPS Coding Suite Based on MELP,"*IEEE Workshop on Speech Coding*, Tsukuba, Japan, October 6—9, 2002.

2003

308. Ajit V. Rao, Sassan Ahmadi, Jan Lindén, Ryan Heidari, Allen Gersho, Vladimir Cuperman "Pitch Adaptive Windows for Improved Excitation Coding in Low-rate CELP coders *IEEE Transactions on Speech and Audio Processing*, , Volume: 11 , Issue: 6 , Nov. 2003 Pages:648 – 659.

Speech Coding for Mobile Ad Hoc Networks
H. Dong, I. D. Chakares, C. -H. Lin, A. Gersho, E. Belding-Royer, U. Madhow, J. D. Gibson,
Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, November 2003

Speech coding for mobile ad hoc networks
Dong, H.; Chakares, I.D.; Lin, C.-H.; Gersho, A.; Belding-Royer, E.; Madhow, U.; Gibson, J.D.;
Signals, Systems and Computers, 2003. Conference Record of the Thirty-Seventh Asilomar Conference on , Volume: 1 , 9-12 Nov. 2003
Pages:280 - 284 Vol.1

2004

H. Dong, I. D. Chakares, A. Gersho, E. Belding-Royer, J. D. Gibson, Selective Bit-error Checking at the MAC Layer for Voice Over Mobile Ad Hoc Networks with IEEE 802.11," WCNC Atlanta 2004. WCNC. 2004 IEEE , Volume: 2 , 21-25 March 2004
Pages:1240 - 1245 Vol.2

A
H. Dong, A. Gersho, J. D. Gibson, V. Cuperman, "Multiple Description Speech Coder Based on AMR-WB for Mobile Ad Hoc"
Networks} ICASSP, 2004 Montreal

J.D. Gibson, A. Servetti, H. Dong, A. Gersho, T. Lookabaugh, J.C. De Martin,
"Selective Encryption and Scalable Speech coding for voice communications over multi-hop wireless links,"
2004 MILCOM conference to be held in Monterey, CA on Oct. 31- Nov. 3.

WMASH 2004

Chi-hsien Lin, Hui Dong, Upamanyu Madhow, Allen Gersho,
"Supporting Real-time Speech on Wireless Ad Hoc Networks: Inter-packet
Redundancy, Path Diversity, and Multiple Description Coding"
ACM WMASH 2004   2nd intern workshop on wireless mobile applications and
Services on WLAN Hotsponts, Philadelphia, PA Oct. 1, 2004.

Allowing Errors in Speech over Wireless LANs
Ian Chakeres, Hui Dong, Elizabeth Belding-Royer, Allen Gersho, and
Jerry Gibson (University of California, Santa Barbara)
4th Workshop on Applications and Services in Wireless Networks
Boston University
Boston, Massachusetts, USA, August 8-11, 2004

**Ian D. Chakeres, Hui Dong, Elizabeth M. Belding-Royer, Allen Gersho and J.
D. Gibson. "Allowing Errors in Speech over Wireless LANs." *Proceedings of
the 4th Workshop on Applications and Services in Wireless Networks
(ASWN)*, Boston, MA , August 2004.**

Hui Dong, Ian D. Chakeres, Allen Gersho, Elizabeth M. Belding-Royer and Jerry D. Gibson.
"Selective Bit-error Checking at the MAC Layer for Voice Over Mobile Ad hoc Networks with
IEEE 802.11." *Proceedings of the IEEE Wireless Communications and Networking Conference
(WCNC)*, Atlanta, GA, March 2004.

2005

Ian Chakeres, Hui Dong, Elizabeth Belding-Royer, Allen Gersho and Jerry Gibson. "Allowing Bit
Errors in Speech over Wireless LANs." *Elsevier Computer Communication Journal*, 2005.
Volume 28, Issue 14, Special issue on: Applications and Services in Wireless Networks,
Computer Communications, Volume 28, Issue 14, 1 September 2005, Pages 1643-1657
Ian Chakeres, Hui Dong, Elizabeth Belding-Royer, Allen Gersho and Jerry Gibson