# CURRICULUM VITAE OF JAMES GEORGE DUNHAM
## February 20, 2021

### I.   PERSONAL

| | |
|---|---|
| Name: | James George Dunham |
| Academic Business Address: | Department of Electrical Engineering<br>Southern Methodist University<br>P.O. Box 750338<br>Dallas, Texas  75275-0338 |
| Academic Business Phones: | 214-768-3112  Office Junkins 321<br>214-768-3573  Fax |
| Email Address: | james.dunham@lyle.smu.edu |
| Web Site: | http://www.lyle.smu.edu/james.dunham |
| Education: | Stanford University   B.S. (EE)     June 1973<br>Stanford University   M.S. (EE)     June 1973<br>Stanford University   Ph.D. (EE)    April 1978 |
| PE Registration | Texas  #77449 - Inactive |

### II.   CURRENT POSITION

August 1984 to Present
Associate Professor of Electrical Engineering
Southern Methodist University
Dallas, Texas  75275-0338

### III.   PREVIOUS ACADEMIC POSITIONS

June 2004 to September 2012
Lyle Associate Dean for Academic Affairs, Research and Infrastructure
Southern Methodist University
Dallas, Texas  75275-0339

September 2003 to May 2004
Associate Dean of Academic Affairs
Southern Methodist University
Dallas, Texas  75275-0335

January 1990 to July 1998
Assistant Dean of Computer Operations
Southern Methodist University
Dallas, Texas  75275-0335

August 1996 to July 1997
Acting Chair of the Electrical Engineering Department
Southern Methodist University
Dallas, Texas  75275-0338

January 1990 to August 1996
Assistant Dean of Undergraduate and Graduate Studies
Southern Methodist University
Dallas, Texas  75275-0335

July 1981 to August 1984
Associate Professor of Electrical Engineering
Washington University
St. Louis, MO  63130

September 1980 to August 1984
Research Associate
Biomedical Computer Laboratory
Washington University
St. Louis, MO  63130

April 1978 to July 1981
Assistant Professor of Electrical Engineering
Washington University
St. Louis, MO  63130

September 1977 to April 1978
Lecturer in Electrical Engineering
Washington University
St. Louis, MO  63130

## IV.  *PROFESSIONAL ACTIVITIES*

Phi Beta Kappa,  Tau Beta Pi,  Eta Kappa Nu, Upsilon Pi Epsilon, Sigma Xi
Member IEEE, Member ASEE
Treasurer, 1993 IEEE International Symposium on Information Theory

**V.** *CHAIRED SYMPOSIA AT INTERNATIONAL CONFERENCES*

1.  Chaired the session on *Source Encoding, Speech and Signal Processing* at the *Sixteenth Annual Allerton Conference on Communication, Control and Computing* held at Allerton House, Monticello, IL, USA, 4-6 October 1978.

2.  Chaired the session on *Data Compression* at the *Seventeenth Annual Allerton Conference on Communication, Control and Computing* held at Allerton House, Monticello, IL, USA, 10-12 October 1979.

3.  Chaired the Impromptu Session at the *1981 IEEE International Symposium on Information Theory (ISIT-81)* held in Santa Monica, CA, USA, 9-12 February 1981.

4.  Chaired the session *Communication Systems* at the *Twentieth Annual Allerton Conference on Communications, Control and Computing* held at Allerton House, Monticello, IL, USA, 6-8 October 1982.

5.  Chaired one session at the *1983 IEEE International Symposium on Information Theory (ISIT-83)* held in St. Jovite, QC, Canada, 26-30 Sep. 1983.

6.  Chaired one session at the *1986 IEEE International Symposium on Information Theory (ISIT-86)* held in Ann Arbor, MI, USA, 6-9 Oct. 1986.

7.  Chaired one session at the *1990 IEEE International Symposium on Information Theory (ISIT-90)* held in San Diego, CA, USA, 14-19 Jan. 1990.

8.  Chaired one session at the *1991 IEEE International Symposium on Information Theory (ISIT-91)* held in Budapest, Hungary, 24-28 June 1991.

9.  Chaired two sessions at *The 3rd ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-2005)* held in Cairo, Egypt, 3-6 Jan. 2005

## VI.  STUDENT THESIS SUPERVISION

### Doctoral Dissertation – Awarded

1.  Kou-Hu Tzou, "A physiologically based human visual system model for threshold vision and image processing," Doctor of Science dissertation, Electrical Engineering, Washington University, St. Louis, MO, 1983.

2.  Sharaf El-Din El-Nahass, "Data compression with applications to digital radiology," Doctor of Science dissertation, Electrical Engineering, Washington University, St. Louis, MO, 1984.

3.  Cheng-Chang Lu, "Data compression with applications to chain code data and binary sequences," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1988.

4.  Amitava Ghosh, "Data compression with application to image coding," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

5.  Chih-Chwen Chuang, "Matrix extension of the RSA algorithm," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

6.  Steven Craig Greer, "Optimal vector quantization and approximations," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1991.

7.  Michael Floyd Gard, "Image construction from severely undersampled scalar infrared data sets," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1992.

8.  Richard Dan Herschaft, "A common approach to extending computer security concepts to the universal distributed non-trusted environment," Doctor of Engineering praxis, Electrical Engineering, Southern Methodist University, Dallas, TX, 1994.

9.  Phen-Lan Lin, "Secret sharing systems," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1994.

10. Roy Thomas Derryberry, "Adaptive reference correlation subpixel tracking," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1995.

11. Kenneth Stacy Barron, "Interlaced encoding for Rayleigh fading channels," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1995.

12. Ibrahim Salih Al-Nomay, "Mobility tracking using an AVL technique for PCS networks," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1999.

13. William Thomas Jennings, "Modulo arithmetic systems and key escrow," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 2000.

14. Nermin Abdelkader Mohamed, "Advanced combined antenna arrays and multi-user detection wireless CDMA receivers in multipath channel," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 2002.

### *Doctoral Dissertation – Others*

1. Chang-Nian Zhang, "VLSI based algorithms and designs for cryptography and residue arithmetic," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1987.

2. Sandeep Chennakeshu, "Multipath diversity receivers for a frequency selective fading channel," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1988.

3. Karim Mokrani, "Fading dispersive channels: detection and coding," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1988.

4. Wail M. Refai, "Performance analysis of digital modulations for mobile radio," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1988.

5. Abdelmajid Bouarfa, "A parallel, non-parametric clustering algorithm with application to image segmentation," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1989.

6. Hong Chih Liu, "Recognition of partial and occluded shapes," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1989.

7. J. David Allen, "The design and implementation of the improved link 11 simulation model," Doctor of Engineering praxis, Computer Science, Southern Methodist University, Dallas, TX, 1990.

8. Huann-Min Chern, "Cordic angle recoding with applications to VLSI signal processing," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

9. Rajeev Krishnamurthi, "An analytical study of block codes in a portable digital cellular system," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

10. Michael Lucks, "A knowledge-based framework for the selection of mathematical software," Doctor of Philosophy dissertation, Computer Science, Southern Methodist University, Dallas, TX, 1990.

11. Byung Hyun Moon, "ML frame synchronization for channels with ISI and co-channel interference," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

12. Essam A. Sourour, "Direct sequence spread spectrum acquisition in nonselective and frequency selective fading channels," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

13. Chukka Srinivas, "Stochastic model based methods for image restoration and segmentation," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

14. Yawpo Yang, "MPSK Automatic signal classification," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1990.

15. Chao-Suan Yeh, "Theoretical and experimental investigation of slab waveguides with periodical grating layer," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1992.

16. Robert Richard Bailey, "Automatic recognition of handwritten numerals via orthogonal moments using statistical and neural network classifiers," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1993.

17. Neal Stephen Stollon, "Information content and measurement for VLSI functions," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1994.

18. David Blair Drumm, "Entropy-coded quantization," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1996.

19. Igor Volobouev, "Rare and forbidden decays of the tau lepton," Doctor of Philosophy dissertation, Physics, Southern Methodist University, Dallas, TX, 1997.

20. William Gale Farquhar, "A multithreaded architecture with deterministic real-time behavior," Doctor of Philosophy dissertation, Computer Science, Southern Methodist University, Dallas, TX, 1998.

21. Hisham A. Mageed, "Spread ALOHA as a multiple access protocol for personal communications in satellite data networks," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1998.

22. Edd Zink, "Image analysis techniques for three-dimensional visualization of topographic paper maps," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 1998.

23. Krishnan G. Indiradevi, "Design and validation of authentication systems," Doctor of Philosophy dissertation, Computer Engineering, Southern Methodist University, Dallas, TX, 2000.

24. Mohamed Fouad Madkour, "W-CDMA for wireless multimedia applications," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 2001.

25. Ahmed H. Hmimy, "Design and analysis of turbo codes for next generation wireless technologies," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 2002.

26. Yu (George) Meng, "Extensible Markov model: an efficient data mining framework for spatiotemporal stream data," Doctor of Philosophy dissertation, Computer Science, Southern Methodist University, Dallas, TX, 2007.

27. Jason Meyer, "Novel SRAM-based FPGA architectures and supporting CAD tools," Doctor of Philosophy dissertation, Computer Science, Southern Methodist University, Dallas, TX, 2007.

28. Matthew Jordan Tonnemacher, "Leveraging Geographical and Spectral Information for Efficient Cellular Systems," Doctor of Philosophy dissertation, Electrical Engineering, Southern Methodist University, Dallas, TX, 2019

## Master Thesis – Awarded

1. Kou-Hu Tzou, "Digital decoding of convolutional codes," Master of Science thesis, Electrical Engineering, Washington University, St. Louis, MO, 1980

2. Norman R. Kolb, "An experimental approach to compressibility estimation and variable-length to variable-length coding," Master of Science thesis, Electrical Engineering, Washington University, St. Louis, MO, 1981.

3. Mark R. Weber, "DNA electrophoresis gel bond location and concentration estimation," Master of Science thesis, Electrical Engineering, Washington University, St. Louis, MO, 1984.

## Master Thesis – Other

1. Gregory Warren Draper, "AC thin film electroluminescent display system," Master of Science in Electrical Engineering thesis, Electrical Engineering, Southern Methodist University, Dallas, TX, 1993.

2. Chung S. Pi, "N-Queens problem and its relationship to affine planes and error-correcting codes," Master of Science thesis, Computer Science, Southern Methodist University, Dallas, TX, 1993.

3. Charles A. Wilson, "Implementation and Analysis of Performance Metrics in Cloud Computing Clusters," Master of Science in Electrical Engineering thesis, Electrical Engineering, Southern Methodist University, Dallas, TX, 2016.

4. Ryan Carl Tanner, "Containerized Cloud Testing with Hadoop", Master of Science in Computer Engineering thesis, Computer Engineering, Southern Methodist University, Dallas, TX, 2016.

5. Anahita Khalilzadeh, "A Novel Ultrasound Imaging Technique Using Random Signals," Master of Science in Electrical Engineering thesis, Electrical Engineering, Southern Methodist University, Dallas, TX, 2018.

## VII. PUBLICATIONS

### Journal Publications

1. James G. Dunham, "A note on the abstract-alphabet block source coding with a fidelity criterion theorem," *IEEE Transactions on Information Theory*, vol. IT-24, no. 6, p. 760, Nov. 1978.  MR0514356 (80a:94022);  Zbl 0387.94005.

2. James G. Dunham, "Abstract alphabet distortion-rate functions," *Information and Control*, vol. 40, no. 2, pp. 181-191, Feb. 1979.  MR528362 (80h:94017); Zbl 0401.94021.

3. James G. Dunham, "Optimal noiseless coding of random variables," *IEEE Transactions on Information Theory*, vol. IT-26, no. 3, p. 345, May 1980.  MR570017 (81e:94011); Zbl 0431.94022.

4. James G. Dunham, "Bounds on message equivocation for simple substitution ciphers," *IEEE Transactions on Information Theory*, vol. IT-26, no. 5, pp. 522-527, Sep., 1980. MR583938 (81g:94042);  Zbl 0441.94011.

5. James G. Dunham, "Abstract alphabet sliding-block entropy compression coding with a fidelity criterion," *The Annals of Probability*, vol. 8, no. 6, pp. 1085-1092, Dec. 1980. MR602382 (83a:94012);  Zbl 0452.94009.

6. James G. Dunham and Robert M. Gray, "Joint source and noisy channel trellis encoding," *IEEE Transactions on Information Theory*, vol. IT-27, no. 4, pp. 516-519, Jul. 1981.  MR635533 (82m:94034);  Zbl 0459.94014.

7. Kou-Hu Tzou and James G. Dunham, "Sliding block decoding of convolutional codes," *IEEE Transactions on Communications*, vol. COM-29, no. 9, pp. 1401-1403, Sep. 1981. Zbl 0461.94006.

8. James G. Dunham and Kou-Hu Tzou, "Performance bounds for convolutional codes with digital Viterbi decoders in Gaussian noise," *IEEE Transactions on Communications*, vol. COM-31, no. 10, pp. 1124-1132, Oct. 1983.  Zbl 0521.94009.

9. John C. Kieffer and James G. Dunham, "On a type of stochastic stability for a class of encoding schemes," *IEEE Transactions on Information Theory*, vol. IT-29, no. 6, pp. 793-797, Nov. 1983.  MR733184 (85g:94005);  Zbl 0582.94014.

10. James George Dunham, "Optimum uniform piecewise linear approximation of planar curves," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. PAMI-8, no. 1, pp. 67-75, Jan. 1986.

11. James G. Dunham, "Optimal discrete-time delta modulation system," *IEEE Transactions on Communications*, vol. COM-34, no. 5, pp. 510-512, May 1986.

12. Sharaf E. Elnahas and James G. Dunham, "Entropy coding for low-bit-rate visual telecommunications," *IEEE Journal on Selected Areas in Communications*, vol. SAC-5, no. 7, pp. 1175-1183, Aug. 1987.

13. Cheng-Chang Lu and James G. Dunham, "Highly efficient coding schemes for contour lines based on chain code representations," *IEEE Transactions on Communications*, vol. COM-39, no. 10, pp. 1511-1514, Oct. 1991.

14. Cheng-Chang Lu and James George Dunham, "A universal model based on minimax average divergence," *IEEE Transactions on Information Theory*, vol. IT-38, no. 1, pp. 140-144, Jan. 1992.  Zbl 0745.94003

15. Cheng-Chang Lu and James G. Dunham, "Shape matching using polygon approximation and dynamic alignment," *Pattern Recognition Letters*, vol. 14, no. 12, pp. 945-949, Dec. 1993.

16. P.-L. Lin and J. G. Dunham, "Secret sharing model – GS$^3$," *Electronics Letters*, vol. 30, no. 25, pp. 2116-2118, Dec. 1994.

17. Nermin A. Mohamed and James George Dunham, "A low-complexity combined antenna array and interference cancellation DS-CDMA receiver in multipath fading channels," *IEEE Journal on Selected Areas in Communications*, vol. SAC-20, no. 2, pp. 248-256, Feb. 2002.

18. Nermin A. Mohamed and James G. Dunham, "A combined antenna array and multi-user detection DS-CDMA receiver in single-path and multi-path fading channels," *Wireless Personal Communications*, vol. 20, no. 3, pp. 251-265, Mar. 2002.

### *Conference Publications*

1. James G. Dunham and Kou-Hu Tzou, "Performance bounds for convolutional codes with mismatched digital Viterbi decoders," in *Proceedings Seventeenth Annual Allerton Conference on Communication, Control and Computing (Allerton 1979)*, Allerton House, Monticello, IL, USA, 10-12 Oct. 1979, pp. 802-809.

2. James G. Dunham, "The principle of conservation of entropy", in *Proceedings Eighteenth Annual Allerton Conference on Communications, Control and Computing (Allerton 1980)*, Allerton House, Monticello, IL, USA, 8-10 Oct. 1980, pp. 440-445.

3. John C. Kieffer and James G. Dunham, "Variable-length to variable-length encoders are asymptotically mean stationary," in *Proceedings Eighteenth Annual Allerton Conference on Communications, Control and Computing (Allerton 1980)*, Allerton House, Monticello, IL, USA, 8-10 Oct. 1980, pp. 438-439.

4. James G. Dunham and Kou-Hu Tzou, "Performance bounds for convolutional codes on Rician fading channels," in *Conference Record – 1981 IEEE International Conference*

*on Communications (ICC 1981 Denver), 'Communications: The Expanding Resource'*, Denver, CO, USA, 14-18 June 1981. vol. 1, pp. 12.4.1-12.4.5.

5.  J. G. Dunham, "Coding large alphabet sources with ECG applications," in *Proceedings of the 1981 34th Annual Conference on Engineering in Medicine and Biology (ACEMB 1981)*, Houston TX, USA, 21-23 Sep. 1981, p. 69.

6.  J. G. Dunham, R. L. Hill, G. J. Blaine, D. L. Snyder and R. G. Jost "Compression for picture archiving and communication in radiology," in *Proceedings SPIE 0418, 2nd International Conference and Workshop on Picture Archiving and Communication Systems (PACS II) for Medical Applications*, Kansas City, MO, USA, 22-25 May 1983, pp. 201-208.

7.  S. E. Elnahas, R. G. Jost, and J. G. Dunham, "Compression of digital diagnostic images in radiology," in *Proceedings of the Eighth Conference on Computer Applications in Radiology*, St. Louis, MO, USA, 23-25 May 1984, pp. 383-409.

8.  Kou-Hu, Tzou and To R. Hsing, and J. G. Dunham, "Applications of physiological human visual system model to image compression," in *Proceedings SPIE 0504, Applications of Digital Image Processing VII*, San Diego, CA, USA, 21-24 Aug. 1984, pp. 419-424.

9.  James George Dunham, "Telecommunications graduate programs at Southern Methodist University," in *Reconnaissance 1986 Proceedings*, The Hilton LBJ, Dallas, TX, USA, 14-15 May 1986, pp. 82-87.

10. James George Dunham, "Telecommunications graduate programs at Southern Methodist University," in *Proceedings – 1986 Frontiers in Education Conference (FIE 1986)*, University of Texas at Arlington, Arlington, TX, USA, 12-15 Oct. 1986, pp. 94-97.

11. James George Dunham and Cheng-Chang Lu, "Highly efficient arithmetic coding schemes for line drawings based on chain code representations," in *Proceedings Twenty-Fifth Annual Allerton Conference on Communications, Control and Computing (Allerton 1987)*, Allerton House, Monticello, IL, USA, 30 Sep.-2 Oct. 1987, pp. 967-968.

12. James George Dunham and Cheng-Chang Lu, "Highly efficient Markov coding schemes based on chain code representations," in *Proceedings of the 1987 IEEE International Conference on Systems, Man and Cybernetics (SMC 1987)*, Radisson Mark Plaza Hotel, Alexandria, VA, USA, 20-23 Oct. 1987, pp. 536-539.

13. Cheng-Chang Lu and James George Dunham, "Hierarchical shape recognition using polygon approximation and dynamic alignment," in *Proceedings of the 1988 International Conference Acoustics, Speech and Signal Processing (ICASSP 1988)*, New York Hilton, New York, NY, USA, 11-14 Apr. 1988, pp. 976-979.

14. Cheng-Chang Lu and James George Dunham, "Adaptive data compression schemes using arithmetic coding," in *Proceedings of the 1988 31st Midwest Symposium on Circuits and Systems (MWSCAS 1988)*, Marriott's Pavilion Hotel, St. Louis, MO, USA, 9-12 Aug. 1988, pp. 908-911 (Invited Paper).

15. Amitava Ghosh and James George Dunham, "Piecewise linear approximation of digital curves – parallel algorithms," in *1989 Proceedings of the First Annual IEEE Symposium on Parallel and Distributed Processing (SPDP 1989)*, Dallas, TX, USA, 22-23 May 1989, pp. 47-48.

16. James George Dunham and Amitava Ghosh, "Improving DPCM system performance," in *Conference Record – 1989 IEEE Global Telecommunications Conference & Exhibition (GLOBECOM 1989), "Communications Technology for the 1990s and Beyond"*, Dallas, TX, USA, 27-30 Nov. 1989, pp. 1890-1894.

17. Steven Craig Greer and James George Dunham, "Optimal quantizers: Computational improvement and performance," in *Proceedings Twenty-Eighth Annual Allerton Conference on Communication, Control and Computing (Allerton 1990)*, Allerton House, Monticello, IL, USA, 3-5 Oct. 1990, pp. 713-714.

18. Chih-Chwen Chuang and James George Dunham, "Matrix extensions of the RSA algorithm," in *Advances in Cryptography - CRYPTO'90*, pp. 140-155. *Lecture Notes in Computer Science - 537*, Springer-Verlag, 1991. MR1232866 (94b:94002); Zbl 0786.94008.

19. Steven Craig Greer and James George Dunham, "A theory for vector quantization," in *Proceedings 1991 IEEE International Symposium on Information Theory (ISIT 1991)*, Budapest, Hungary, 24-28 June 1991, p. 254.

20. Kenneth S. Barron and James G. Dunham, "The effect of non-equiprobable source symbols on maximum-likelihood Viterbi decoder performance," in *Conference Record – 1995 IEEE International Conference on Communications (ICC 1995 Seattle), 'Gateway to Globalization'*, Sheraton Seattle Hotel and Towers, Seattle, WA, USA, 18-22 June 1995, vol. 2, pp. 692-696.

21. R. Thomas Derryberry and James George Dunham, "Search-based subpixel tracking," in *Proceedings of the 1996 IEEE International Symposium on Circuits and Systems (ISCAS 1996 Atlanta), 'Circuits and Systems Connecting the World'*, Atlanta, GA, USA, 12-15 May 1996, vol. supplement, pp. 38-40.

22. William T. Jennings and James G. Dunham, "Key escrowing systems and limited one way functions," in *Proceedings 19th NIST-NCSC National Information Systems Security Conference*, Baltimore Convention Center, Baltimore, MD, USA, 22-25 Oct 1996, vol. 1, pp. 202-214. Reprinted in the *Datapro Information Services Group*.

23. Phen-Lan Lin and James G. Dunham, "Block codes for collusion-nonpermissible secret sharing systems" in *Proceedings of the International Conference on Cryptology and Information Security (ICS 1996)*, National Sun Yat-Sen University, Kaoshung, Taiwan, 12-15 Dec. 1996, pp. 27-34.

24. Nomay and J. Dunham, "A statistical AVL technique using LMMSE estimate and time diversity," in *Proceedings of the Tenth International Conference on Wireless Communications (Wireless 1998)*, Coast Plaza Hotel, Calgary, AB, Canada, 6-8 July 1998, pp. 600-604.

25. Nomay and J. Dunham, "ML estimate based AVL technique using signal strength measurement with time diversity," in *Proceedings Thirty-Sixth Annual Allerton Conference on Communication, Control and Computing (Allerton 1998)*, Allerton House, Monticello, IL, USA, 23-25 Sep. 1998, pp. 167-176.

26. Nermin A. Mohamed and James G. Dunham, "Performance analysis of CDMA mobile systems using antenna arrays and multi-user detection," in *Conference Record of the Thirty-Second Asilomar Conference on Signals, Systems and Computers (ACSSC 1998)*, Pacific Grove, CA, USA, 1-4 Nov. 1998, pp. 1883-1887.

27. Nermin A. Mohamed and James G. Dunham, "Adaptive beamforming for DS-CDMA using conjugate gradient algorithm in a multipath fading channel," in *Digest of papers of the 1999 IEEE Emerging Technologies Symposium: Wireless Communications and Systems (ETWCS 1999)*, Clarion Hotel, Richardson, TX, USA, 12-13 Apr. 1999, pp. 1.3.1-1.3.5.

28. Nermin A. Mohamed and James G. Dunham, "Performance analysis of an antenna array-based CDMA receiver using multi-user detection in a multipath channel," in *Proceedings of the 1999 IEEE 49th Vehicular Technology Conference (VTC 1999), 'Moving into a new Millennium'*, Houston, TX, USA, 16-20 May 1999, vol. 2, pp. 1623-1627 (CD-ROM 337.1-337.5).

29. Ibrahim S. Nomay and James G. Dunham, "AVL based virtual destination hand off algorithm," in *Proceedings of the 1999 IEEE 49th Vehicular Technology Conference (VTC 1999), 'Moving into a new Millennium'*, Houston, TX, USA, 16-20 May 1999, vol. 2, pp. 1599-1603 (CD-ROM 54.1-54.6).

30. Nermin A. Mohamed and James G. Dunham, "A simple combined conjugate gradient beamforming and interference cancellation scheme for DS-CDMA in a multipath fading channel," in *Conference Record: 1999 IEEE Wireless Communications and Networking Conference (WCNC 1999)*, New Orleans, LA, USA, 21-24 Sep. 1999, vol. 2, pp. 859-863.

31. Nermin A. Mohamed and James G. Dunham, "A combined antenna array and LMMSE multi-user detection DS-CDMA receiver in multipath fading channels," in *Digest of Papers of the 2000 IEEE Emerging Technologies Symposium on Broadband, Wireless Internet Access (ETS 2000)*, Clarion Hotel, Richardson, TX, USA, 10-11 Apr. 2000, pp. 3.2.1-3.2.5.

32. Phen-Lan Lin and James G. Dunham, "Secure rotation- and translation-resilient image watermarking based on Magic-Eye template detector," in *Proceedings of the 2002 International Conference on Imaging Science, Systems and Technology (CISST 2002)*, Las Vegas, NV, USA, 24-27 Jun 2002, pp. 505-510.

33. Ming-Tan Sun, James G. Dunham and Zhi Gang Li, "Using neural networks to classify homogeneous delta files," in *Proceedings of the 13th Information Security Conference (ISC 2003)*, Chang Gung University, Tao-Yuan, Taiwan, 28-29 August 2003, pp. 181-188.

34. James George Dunham, Ming-Tan Sun and Judy C. R. Tseng, "Classifying file type of stream ciphers in depth using neural networks," in *The 3$^{rd}$ ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2005)*, Cairo, Egypt, 3-6 Jan. 2005, pp. 535-541.
DOI: 10.1109/GLOCOM.2015.7417284

35. Eran Pisek, Shadi Abu-Surra, Rakesh Taori, James Dunham, and Dinesh Rajan, "Enhanced Cryptcoding: Joint Security and Advanced Dual-Step Quasi-Cyclic LDPC Coding," in *2015 IEEE Global Communications Conference (GLOBECOM 2015),* San Diego, California, USA, 6-10 Dec. 2015, pp. 1-7.
DOI: 10.1109/GLOCOM.2015.7417284

36. Senwen Kan, Jennifer Dworak and James George Dunham, "Echeloned IJTAG Data Protection," in *2016 IEEE Asian Hardware Oriented Security and Trust Symposium (AsianHOST)*, Yilan, Taiwan, 19-20 Dec. 2016, pp. 1-6.
DOI: 10.1109/AsianHOST.2016.7835558

37. Shawn Prestridge and James Dunham, "Improving Throughput in BB84 Quantum Key Distribution," in *Proceedings of the 14th International Joint Conference on e-Business and Telecommunications, Volume 4: SECRYPT 2017*, Madrid, Spain, 24-26 July 2017, pp. 437-443.

### *Conference Abstract Publications*

1. James G. Dunham and Robert M. Gray, "Joint source-channel time-invariant trellis encoding," in *Abstracts of Papers – 1977 IEEE International Symposium on Information Theory (ISIT 1977)*, Ithaca, NY, USA, 10-14 Oct. 1977, pp. 126-127.

2. James G. Dunham, "Mismatch theorems for trellis encoding communication systems," in *Proceedings Sixteenth Annual Allerton Conference on Communication, Control and Computing (Allerton 1978)*, Allerton House, Monticello, IL, USA, 4-6 Oct. 1978, p. 696.

3. James G. Dunham, "Block and sliding-block joint source-channel coding theorems," in *Abstracts of Papers – 1979 IEEE International Symposium on Information (ISIT 1979)*, Grignano, Italy, 25-29 June 1979, p. 50.

4. James G. Dunham, "Joint source and channel mismatch theorems," in *Abstracts of Papers – 1979 IEEE International Symposium on Information (ISIT 1979)*, Grignano, Italy, 25-29 June 1979, p. 61.

5. James G. Dunham, "Key managed cryptographic systems," in *Abstracts of Papers – 1979 IEEE International Symposium on Information (ISIT 1979)*, Grignano, Italy, 25-29 June 1979, p. 99.

6. James G. Dunham, "Asymptotic properties of mismatch Chernoff bounds," in *Proceedings of the 1980 Conference on Information Sciences and Systems (CISS 1980)*, Princeton University, Princeton, NJ, USA, 26-28 Mar. 1980, p. 436.

7. J. G. Dunham, "Bounds on message equivocation for simple substitution ciphers," in *Abstracts of Papers – 1981 IEEE International Symposium on Information Theory (ISIT 1981)*, Santa Monica, CA, USA, 9-12 Feb. 1981, p. 46.

8. Norman R. Kolb and James G. Dunham, "An experimental approach for designing variable-length to variable-length codes," in *Proceedings Nineteenth Annual Allerton Conference on Communications, Control and Computing (Allerton 1981)*, Allerton House, Monticello, IL, USA, 30 Sep.-2 Oct. 1981, p. 69.

9. James G. Dunham, "Substitution and transposition ciphers," in *Proceedings Twentieth Annual Allerton Conference on Communications, Control and Computing (Allerton 1982)*, Allerton House, Monticello, IL, USA, 6-8 Oct. 1982, p. 688.

10. Kou-Hu Tzou and James G. Dunham, "A physiological-based human visual system model for image processing," in *Abstracts of Papers – 1983 IEEE International Symposium on Information Theory (ISIT 1983)*, St. Jovite, QC, Canada, 26-30 Sep. 1983, p. 33.

11. James G. Dunham, "An iterative theory for code design," in *Abstracts of Papers – 1983 IEEE International Symposium on Information Theory (ISIT 1983)*, St. Jovite, QC, Canada, 26-30 Sep. 1983, pp. 89-90.

12. James G. Dunham, "Optimal source coders with real-time constraints," in *Abstracts of Papers – 1983 IEEE International Symposium on Information Theory (ISIT 1983)*, St. Jovite, QC, Canada, 26-30 Sep. 1983, p. 45.

13. James G. Dunham, "Strongly ideal cryptographic systems for rational Markov processes," in *Abstracts of Papers – 1983 IEEE International Symposium on Information Theory (ISIT 1983)*, St. Jovite, QC, Canada, 26-30 Sep. 1983, p. 93.

14. James George Dunham, "Characterizations of the Shannon entropy using the symmetric group of degree 3," in *Abstracts of Papers – 1985 IEEE International Symposium on Information Theory (ISIT 1985)*, Brighton, England, 24-28 June 1985, p. 173.

15. James G. Dunham, "Structure of a causal communication system," in *Abstracts of Papers – 1985 IEEE International Symposium on Information Theory (ISIT 1985)*, Brighton, England, 24-28 June 1985, p. 173.

16. Sharaf E. Elnahas, Kou-Hu Tzou, and James G. Dunham, "Source modeling for arithmetic codes with applications to low-rate image compression," in *Abstracts of Papers – 1986 IEEE International Symposium on Information Theory (ISIT 1986)*, Ann Arbor, MI, USA, 6-9 Oct. 1986, p. 157.

17. Cheng-Chang Lu and James George Dunham, "A universal model based on minmax average divergence," in *Abstracts of Papers – 1990 IEEE International Symposium on Information Theory (ISIT 1990)*, San Diego, CA, USA, 14-19 Jan. 1990, p. 99.

18. Amitava Ghosh and James George Dunham, "Optimum scalar and vector predictive quantizer design," in *Abstracts of Papers – 1990 IEEE International Symposium on Information Theory (ISIT 1990)*, San Diego, CA, USA, 14-19 Jan. 1990, pp. 79-80.

*Reviews*

1. James G. Dunham, Review of Ihara, Shunsuke, "On the capacity of the continuous time Gaussian channel with feedback," *Journal of Multivariate Analysis*, 10 (1980), no. 3, 319–331. *Mathematical Reviews*, MR0588075 (82a:94061), 1982.

2.  James G. Dunham, Review of Gualtierotti, A. F., "On average mutual information and capacity for a channel without feedback and contaminated Gaussian noise," *Information and Control*, 46 (1980), no. 1, 46–70. *Mathematical Reviews*, MR0596302 (82a:94037), 1982.

3.  James G. Dunham, Review of Arora, P. N., "An axiomatic characterization of inaccuracy functions," *Indian Journal of Pure and Applied Mathematics*, 13 (1982), no. 2, 158–162. *Mathematical Reviews*, MR0651827 (84g:94005), 1984.

4.  James G. Dunham, Review of Hashimoto, Takeshi, "A direct proof of the equality between the block definition and the process definition of distortion-rate functions for stationary ergodic sources," *Information and Control*, 51 (1981), no. 1, 45–57. *Mathematical Reviews*, MR0686194 (84c:94007), 1984.

5.  James G. Dunham, Review of Oancea, Elena, "Indicateurs informationels de classification," (French) [Informational indicators in classification], *Studia Universitatis Babeş-Bolyai Mathematica*, 27 (1982), 44–48. *Mathematical Reviews*, MR0691630 (84d:62017), 1984.

6.  James G. Dunham, Review of Arora, P. N.; Chowdhary, Subhash, "Shannon's entropy and cyclicity," *Cybernetics and Systems*, 13 (1982), no. 4, 345–356. *Mathematical Reviews*, MR0700752 (84g:94004), 1984.

7.  James G. Dunham, Review of Nath, Prem; Mohan, Kaur, Man, "On some characterizations of the Shannon entropy using extreme symmetry and block symmetry," *Information and Control*, 53 (1982), no. 1-2, 9–20. *Mathematical Reviews*, MR0715518 (85f:94008), 1985.

8.  James G. Dunham, Review of DeLaurentis, John M., "A further weakness in the common modulus protocol for the RSA cryptoalgorithm," *Cryptologia*, 8 (1984), no. 3, 253–259. *Mathematical Reviews*, MR0747231 (85m:94025), 1985.

9.  James G. Dunham, Review of Stüber, Gordon; Mark, Jon W.; Blake, Ian F., "Sequence acquisition using bit estimation techniques," *Information Science*, 32 (1984), no. 3, 217–229. *Mathematical Reviews*, MR0749150 (85m:94005), 1985.

10. James G. Dunham, Review of Burbea, Jacob, "The convexity with respect to Gaussian distributions of divergences of order α," *Utilitas Mathematica*, 26 (1984), 171–192. *Mathematical Reviews*, MR0771280 (86d:94021), 1986.

11. James G. Dunham, Review of Yuille, A. L.; Poggio, T., "Fingerprints theorems for zero crossings," *Journal of the Optical Society of America A*, 2 (1985), no. 5, 683–692. *Mathematical Reviews*, MR0789561 (86m:94017), 1986.

12. James G. Dunham, Review of Marcus, Brian, "Sofic systems and encoding data," *IEEE Transactions on Information Theory*, 31 (1985), no. 3, 366–377. *Mathematical Reviews*, MR0794434 (86m:94021), 1986.

13. James G. Dunham, Review of Pursley, Michael B.; Stark, Wayne E., "Performance of Reed-Solomon coded frequency-hop spread-spectrum communications in partial-band interference," *IEEE Transactions on Communications*, 33 (1985), no. 8, 767–774. *Mathematical Reviews*, MR0800938 (86m:94010), 1986.

14. James G. Dunham, Review of Ziv, Jacob, "On universal quantization," *IEEE Transactions on Information Theory*, 31 (1985), no. 3, 344–347. *Mathematical Reviews*, MR0794431 (87b:94027), 1987.

*Thesis*

1. James George Dunham, "Source and channel coding theory," Doctor of Philosophy dissertation, Electrical Engineering, Stanford University, Stanford, CA, USA, 1978.

*Reports*

1. James G. Dunham, "An iterative theory for code design," Washington University School of Medicine, Bernard Becker Medical Library, Archives and Rare Books, St. Louis, MO, USA, Biomedical Computer Laboratory Monograph 389, Jan. 1981.

2. Kou-Hu Tzou and James G. Dunham, "A preliminary study of iterative code design for silver-grain images," Washington University School of Medicine, Bernard Becker Medical Library, Archives and Rare Books, St. Louis, MO, USA, Biomedical Computer Laboratory Monograph 407, Dec. 1981.

3. James G. Dunham, "Optimal delta modulation system," Washington University School of Medicine, Bernard Becker Medical Library, Archives and Rare Books, St. Louis, MO, USA, Biomedical Computer Laboratory Monograph 432, Jun. 1983.

4. Kou-Hu Tzou and James G. Dunham, "A physiological-based human visual system model for image processing," Washington University School of Medicine, Bernard Becker Medical Library, Archives and Rare Books, St. Louis, MO, USA, Biomedical Computer Laboratory Monograph 437, Aug. 1983.

5. Sharaf E. Elnahas, Kou-Hu Tzou and James G. Dunham, "Source modeling for arithmetic codes with applications to low-rate image coding," GTE Laboratories Inc., Waltham, MA, USA, Report TN 86-188.4, Apr. 1986.

6. James George Dunham, "Cryptography and Data Security," Southern Methodist University, Dallas, TX, USA, EE6372 Class Notes, Jan. 1993.

*Citations*

There are over 1,000 citations to the publications listed above. Below is a chart showing the distribution of citations on a per year basis.

**Confirmed Citations per Year**