

## **PUBLICATIONS**

### **Chapters in Edited Books (9):**

Student co-authors are indicated by <sup>†</sup>

1. H. C. Kum, S. Ahalt, and D. Pathak. Privacy-Preserving Data Integration Using Decoupled Data. In Security and Privacy in Social Network, by Y. Elovici, Y. Altshuler, A. Cremers, N. Aharony, A. Pentland (editors), Springer publishing, 2012
2. Honglin Li<sup>†</sup>, Yi Zhao<sup>†</sup>, José-Luis Sancho-Gómez, and Stanley Ahalt, "Annotation, Storage, Retrieval and Analysis of Digital Video," *Integrated Media Communication Techniques*, J. F. Tasic, M. Najim, and M. Ansorge (eds), Kluwer, July 2003
3. "2D HRR Radar Data Modeling and Processing," Junshui Ma<sup>†</sup>, Xun Du<sup>†</sup>, and Stanley C. Ahalt, *Radar Signal Processing and Its Applications*, R. Hummel and J. Li (eds), Kluwer, March 2003
4. D. Prabhu, S. Ahalt, and A. Krishnamurthy, "High-Performance Computing in Signal and Image Processing, *Sourcebook of Parallel Computing*, Morgan Kaufman Publishers, pp. 243-248, 2002, ISBN 1-55860-871-0
5. José Luis Sancho<sup>†</sup>, Batu Ulug<sup>†</sup>, Aníbal Figueiras-Vidal, William Pierson<sup>†</sup>, and S. C. Ahalt, "Boundary Methods for Distribution Analysis," *Intelligent Methods in Signal Processing and Communications*, F. P. Gonzalez (ed), Birkhauser, Boston, MA, 1996. (Refereed)
6. Aristedes S. Galanopolous<sup>†</sup>, James E. Fowler, Jr.<sup>†</sup>, and Stanley C. Ahalt, "Vector Quantization using Artificial Neural Network Models," *Signal Processing in Telecommunications*, E. Biglieri and M. Luise (eds), Springer Verlag, London, pp. 346-357, 1996, (Invited and refereed)
7. Stanley C. Ahalt, Stuart A. Collins<sup>†</sup>, Ashok K. Krishnamurthy, and Daniel F. Stewart<sup>†</sup>, "Optical Implementation of Closest Vector Selection, *Neural Networks: Applications and Implementation*," *Neural Networks*, Omid Omidvar (ed.), Ablex Publishers, 1994, (Invited and refereed)
8. Stanley C. Ahalt, Tzyy-Ping Jung<sup>†</sup>, and Ashok K. Krishnamurthy, "A Comparison of MLP and FSCL-LVQ Neural Networks for Vowel Classification," *Neural Networks*, vol. III, pp. 124-143, Prentice Hall, 1991 (Invited)
9. S. C. Ahalt, F. D. Garber, I. Jouny<sup>†</sup>, and A. K. Krishnamurthy, "Performance of Synthetic Neural Network Classification of Noisy Radar Signals," *Advances in Neural Information Processing Systems*, Morgan Kaufman, New York, vol. 1, pp 281-288, 1989, (Refereed)

### **Bulletins and Technical Reports (26):**

1. Timmes, Frank, Matthew Turk, Stan Ahalt, Shaowen Wang, Ray Idaszak, Richard Brower, Chris Lenhardt, and Karl Gustafson. "2016 Software Infrastructure for Sustained Innovation (SI2) PI Workshop." (2016)
2. F Timmes, S Ahalt, M Turk, R Idaszak, M Schildhauer, "2015 Software Infrastructure for Sustained Innovation (SI2) Principal Investigators Workshop", Workshop Report, April 14, 2015
3. Stan Ahalt, A Couch, L Ibanez, Ray Idaszak, "NSF Workshop on Supporting Scientific Discovery through Norms and Practices for Software and Data Citation and Attribution", Workshop Report, April 20, 2015

4. Ahalt, S., Band, L., Christopherson, L., Idaszak, R., Lenhardt, C., Minsker, B., Palmer, M., Shelley, M., Tiemann, M., & Zimmerman, A. "Water Science Software Institute: Agile and open source scientific software development". May/June 2014 issue of IEEE Computing in Science and Engineering (CiSE). DOI: [10.1109/MCSE.2014.5](https://doi.org/10.1109/MCSE.2014.5)
5. Kum HC, Krishnamurthy A, Ashwin, Ahalt SC. "Population Informatics: Tapping the Social Genome to Advance Society. A Vision for Putting "Big Data" to Work for Population Informatics". IEEE Computer Society, 2013. In Press.
6. Kum HC, Pathak D, Krishnamurthy A, Reiter M, Ahalt S. Secure Decoupled Linkage (SDLink) for Building a Social Genome. 2013 IEEE International Conference on Big Data (IEEE BigData 2013). In Press.
7. Hye-chung Kum; Darshana Pathak; Gautam Sanka; Stanley Ahalt, "Privacy beyond anonymity: Decoupling data through encryption," TR12-003, <http://www.cs.unc.edu/xcms/techreports/techreports.html>.
8. Hye-chung Kum; Stanley Ahalt, "Privacy by Design for Secondary Data Analysis," TR12-002, <http://www.cs.unc.edu/xcms/techreports/techreports.html>
9. [Mane KK, Schmitt C, Owen P, Gersing K, Ahalt SC, Wilhelmssen K, "Data-driven approaches to augment clinical decision in EMR Era", IEEE Xplore Digital Library, May 28, 2012, Cognitive Information Processing \(CIP\), 3<sup>rd</sup> International Workshop; Doi: 10.1109/CIP.6232907](#)
10. [Linh Bao Ngo, Dantuluri V, Stealey M, Ahalt S, Apon A, "An Architecture for Mining and Visualization of US Higher Education Data", Information Technology: New Generations \(ITNG\), 2012 9<sup>th</sup> International Conference, DOI: 10.1109/ITNG.2012.151, pp 783-789](#)
11. P. Dreher, S. Ahalt, G. Almes, M. Mundrane, J. Pepin and C. Stewart. "Campus Bridging: Campus Leadership Engagement in Building a Coherent Campus Cyberinfrastructure Workshop Report." April 2011., Final report and recommendations from the October, 2010, workshop on campus bridging sponsored by the NSF Campus Bridging Task Force (<http://pti.iu.edu/campusbridging/leadership>).
12. Kum, H.C., and Ahalt, S. 2011. "Decoupled Data for Privacy Preserving Record Linkage with Error Management", IEEE Socia IComp 2011 Workshop on Security and Privacy in Social Networks, MIT Boston
13. S. Ahalt, A. Apon, D. Lifka, H. Neeman. "NSF-Sponsored Workshop Report: Sustainable Funding and Business Models for Academic Cyberinfrastructure Facilities." November, 2010, Final report for the National Science Foundation-sponsored workshop held May 3-5 at Cornell University, see <http://casc.org/papers.php>
14. S. Ahalt, R. Idaszak, B. Minkser, et. al. "NSF Workshop on Creating Scientific Software Innovation Institutes for Sustained Cyberinfrastructure Achievement and Excellence Final Report," Final report from NSF workshop held Oct. 3 and 4, 2010, in Arlington, VA.
15. P. Dreher, et., al., "Developing a Coherent Cyberinfrastructure from the Campus to the National Facilities: Challenges and Strategies," *A Joint Workshop Report between CCI and the Coalition for Scientific Computation*, February 2009
16. Dooley, R., et. al., "Sustainable cyberinfrastructure software: perspectives and priorities," Coalition for Academic Scientific Computation ([www.casc.org](http://www.casc.org)), 2009.

17. D. E. Hudak, T. Bitterman, N. Ludban, S. C. Ahalt, "Sustainable Software Ideas for the Next Generation Research Grid: Standards, Interoperability and Software Development," Position Paper, *NSF Workshop on Sustainable Software*, Indianapolis, IN, Mar. 26-27, 2009.
18. S. Ahalt, S. Graves, D. Keyes, H. Neeman, T. Sterling. *Final Report of the Arkansas Cyberinfrastructure Initiative External Advisory Committee*, January, 2008.  
<http://comp.uark.edu/~aapon/EACReportFINALv1.pdf>
19. Nehrbass, J. Chaves, S. Ahalt and A. Krishnamurthy, "MatlabMPI Compilation Technology Report," submitted for publication on the *Online Knowledge Center (OKC)*, January 31, 2005
20. S. C. Ahalt, A. K. Krishnamurthy, J.W. Nehrbass, and J.C. Chaves, "Support for ATR Programs" *PA Document Number- ASC 04-1793*, Disposition Date-8 December 2004
21. A.K. Krishnamurthy, S. C. Ahalt, J.W. Nehrbass and J. C. Chaves, "High Productivity Computing for SIP," *PA Document Number- ASC 04-1758*, Disposition Date- 17 November 2004
22. S.C. Ahalt, A.K. Krishnamurthy, J. W. Nehrbass, and J. C. Chaves, "Signal Mining, Fusion and Validation," *PA Document Number- ASC 04-1755*, Disposition Date-17 November 2004
23. S. C. Ahalt and T. P. Jung: "Large Neural Networks: Simulation and Analyses," Final Report, *Cray Research, Inc.* April 1990
24. S. C. Ahalt, P. Chen and T. P. Jung: "The Design of the Neural Shell," Final Report, *Cray Research, Inc.*, December 1988
25. J. F. Leathrum, S. C. Ahalt, "Ada Compiler Rehosting: A Planning Project Final Report," *Clemson University, Southeastern Center for Electrical Engineering Education*, July 1985
26. S. C. Ahalt, "HDLC Interfaces for Two Microprocessors", *Bell Telephone Laboratory Technical Report*, January 1981
27. S. Ahalt, "Characterizing the Propagation Medium using a Dual Polarized Communications Receiver," *NASA Final Project Report*, August 1980
28. S. Ahalt, L. Band, B. Minsker, M. Palmer, M. Tiemman, R. Idaszak, C. Lenhardt, M. Whitton, S.L. Star and SESYNC "Overview of the Water Science Software Institute And Summary of Prototyping Activities," June 17, 2013
29. S. Ahalt, L. Band, B. Minsker, and M. Palmer "Exploring and Evaluating the Role of Hackathons in a Water Science Software Institute (WSSI)," Full Event Report and Recommendations July 14, 2013, NSF-funded Event, Chapel Hill, NC, April 15-19, 2013

#### **Peer Reviewed Journal Articles (45):**

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1. Sancho-Gomez JS, Ahalt SC, Figueiras-Vidal AR, "Linear Discriminants described by Tangent Ellipsoids" 2016, (submission pending)
2. Reilly, J, Ahalt, SC, McGee, J, Owen, P, Schmitt, Ch, Wilhelmsen, K, "A Service-Oriented Architecture for Genomics Research within an Academic Biomedical Research Institution", *Journal of Biomedical Informatics*, *Informatics* July 2015, 2(3), 20-30; doi:[10.3390/informatics2030020](https://doi.org/10.3390/informatics2030020)
3. Lenhardt, W.C., Ahalt, S, Blanton, B, Christopherson, L and Idaszak, R July 2014. Data Management Lifecycle and Software Lifecycle Management in the Context of Conducting Science. *Journal of Open Research Software* 2(1):e15, DOI: <http://dx.doi.org/10.5334/jors.ax>

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5. Shoffner M., Owen P., Mostafa J., Lamm B., Wang X., Schmitt C., Ahalt S., "The Secure Medical Research Workspace: An IT Infrastructure to Enable Secure Research on Clinical Data," *Clinical and Translational Science Journal*, 2013 Jun;6(3):222-5. Doi:1111/cts. 12060. Epub 2013 Apr 19.
6. Kum, H.C, Ahalt, S., Carsey, T. 2011. Dealing with Data: Government Records. *Science*, 2011, Jun 10; Vol 332. No. 6035. p 1263. DOI: 10.1126/science.332.6035.1263
7. Oermann EK, Kress MA, Collins BT, Collins SP, Morris D, Ahalt SC, Ewend MG. "Predicting survival in patients with brain metastases treated with radiosurgery using artificial neural networks". *Neurosurgery*, 2013 Jun; 72(6):944-51; discussion 952. Doi: 10.1227/ NEU.0b013e31828ea04b. PMID: 18255705
8. Apon, Amy, Ahalt, Stan, Dantuluri, Vijay, Gurdgiev, Constantin, Limayem, Moez, Ngo, Linh, Stealey, Michael, "High Performance Computing Instrumentation and Research Productivity in U. S. Universities" *Journal of Information Technology Impact*, vol. 10, No.2, pp.87-98, 2010.
9. Kepner, Jeremy, Ahalt, Stan, "MatlabMPI," *Journal of Parallel and Distributed Computing*, vol, 64, issue 8, August 2004, pp 997-1005
10. Ma, Junshui<sup>†</sup>, Krishnamurthy, Ashok, and Ahalt, Stanley, "SVM Training with Duplicated Samples and its Application in SVM-based Ensemble Methods," *Neurocomputing*, vol. 61, pp. 4555-459, 2004
11. Aradhye, H. B., Bakshi, B. R., Davis, J. F., & Ahalt, S. C., "Clustering in Wavelet Domain: A Multiresolution ART Network for Anomaly Detection" *AICHE JOURNAL*. 50,(2004) 2455-2466.
12. Junshui Ma<sup>†</sup>, Xun Du<sup>†</sup>, Stanley C. Ahalt, "2D HRR Radar Data Modeling and Processing," *Multidimensional Systems and Signal Processing*, 14, 25-48, 2003, Kluwer Academic Publishers.
13. Junshui Ma<sup>†</sup>, Jose L. Sancho-Gomez, and Stanley C. Ahalt, "Non-linear Multi-class Discriminant Analysis," *IEEE Transactions on Signal Processing Letters*, July, 2003
14. C. He<sup>†</sup>, Y.F. Zheng, and S.C. Ahalt, "Object Tracking using the Gabor Wavelet Transform and the Golden Section Algorithm," *IEEE Transactions on Multimedia*, Vol. 4, No. 4, December, 2002, pp. 528-538
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16. Adriana Dapena and Stanley C. Ahalt, "A Hybrid DCT-SVD Image Coding Algorithm," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 12, no. 2, pp 114-121, Feb. 2002
17. Junshui Ma<sup>†</sup>, Jose L. Sancho-Gomez, and Stanley Ahalt, "Non-linear Multi-class Discriminant Analysis," *IEEE Signal Processing Letters*, 9 Oct. 2002
18. He, C. <sup>†</sup>, Zheng, Y.F., and Ahalt, S., "Object Tracking using the Gabor Wavelet Transform and the Golden Section Algorithm," *IEEE Transactions on Multimedia.*, July, 2002
19. J. L. Sancho, William E. Pierson<sup>†</sup>, Batu Ulug, Stanley C. Ahalt, and A. R. Figueiras-Vidal, "Class Separability Estimation and Incremental Learning using Boundary Methods," *Neurocomputing*, vol. 35, no. 1-4, pp 3 –26, Nov., 2000

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21. Xun Du<sup>†</sup>, Stanley C. Ahalt, and Bruce E. Stribling, "3-D Orientation Vector Estimation for Sub-Components of Space Object Imagery," *Optical Engineering, Special Issue on Advances in Recognition Techniques*, March, 1998
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25. Batuhan Ulug<sup>†</sup>, Stanley C. Ahalt and Rick Mitchell, "Efficient ATR using Compression," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 33, no. 4, pp. 1199-1211, October 1997
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27. L. R. Flake<sup>†</sup>, S. C. Ahalt, and A. K. Krishnamurthy, "Detecting Anisotropic Scattering with Hidden Markov Models," *IEEE Proceedings: Radar, Sonar and Navigation*, vol. 144, no. 2, pp. 81-86, April 1997
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29. James R. Whiteley<sup>†</sup>, James F. Davis, Amit Mehrotra<sup>†</sup>, and Stanley C. Ahalt, "Observations and Problems Applying ART2 for Dynamic Sensor Pattern Interpretation," *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 26, no. 4, pp. 423-437, July 1996
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31. DeLiang Wang, Xiaomei Liu<sup>†</sup>, and Stanley C. Ahalt, "On Temporal Generalization of Simple Recurrent Networks," *Neural Networks*, vol. 9, no. 7, pp. 1099-1118, 1996
32. James E. Fowler<sup>†</sup>, Kenneth C. Adkins<sup>†</sup>, Steven B. Bibyk and Stanley C. Ahalt, "Real-Time Video Compression using Differential Vector Quantization," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 5, no. 1, pp. 14-24, February 1995
33. Mary E. Beckman, Tzyy-Ping Jung<sup>†</sup>, Sook-hyang Lee<sup>†</sup>, Kenneth de Jong, Ashok K. Krishnamurthy, Stanley C. Ahalt, K. Bretonnel Cohen<sup>†</sup>, and Michael J. Collins<sup>†</sup>, "Variability in the Production of Quantal Vowels Revisited," *Journal of the Acoustical Society of America*, vol. 97, no. 1, pp. 471-491, January 1995

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36. Mark D. Hanes<sup>†</sup>, Stanley C. Ahalt, and Ashok K. Krishnamurthy, "Acoustic to Phonetic Mapping using Recurrent Neural Networks," *IEEE Transactions on Neural Networks*, vol. 5, no. 4, pp. 659-662, July 1994
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39. James E. Fowler<sup>†</sup>, Matthew R. Carbonara<sup>†</sup>, and Stanley C. Ahalt, "Image Coding using Differential Vector Quantization," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 3, no. 5, pp. 350-367, 1993
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44. Christopher Mills<sup>†</sup>, Stanley C. Ahalt, and Jim Fowler<sup>†</sup>, "Compiled Instruction Set Simulation," *The Journal of Software-Practice and Experience*, vol. 21, no. 8, pp. 877-899, March 1991
45. Ashok K. Krishnamurthy, Stanley C. Ahalt, Douglas E. Melton<sup>†</sup>, and Prakoon Chen<sup>†</sup>, "Neural Networks for Vector Quantization of Speech and Images," *IEEE Journal on Selected Areas in Communication*, vol. 8, no. 8, pp. 1449-1457, October 1990
46. Stanley C. Ahalt, Ashok K. Krishnamurthy, Prakoon Chen<sup>†</sup>, and Douglas E. Melton<sup>†</sup>, "Competitive Learning Algorithms for Vector Quantization" *Neural Networks* vol. 3 no. 3, pp. 277-290, May 1990

#### **Editor Reviewed Journal Articles (4):**

Student co-authors are indicated by <sup>†</sup>

1. S. Ahalt, "SIP Forum 2000" in *ASC MSRC Journal*, vol. 4.2, Fall, 2000, p.21 (edited journal).



2. M. D. Hanes<sup>†</sup>, S. C. Ahalt, K. Mirza, and D. E. Orin, "The use of ANN for Robot Grasping Control," *Visions*, Issue 3.4, pp. 7-11, Fall 1990. (*Visions* is the quarterly publication of the Ohio Supercomputer Center.)
3. D. Olson, S. C. Ahalt, R. Barga, and G. Wilcox, "Artificial Neural Network Simulation on Cray Systems," *Cray Channels*, vol. 11, no. 2, pp. 20-23, 1989. (*Cray Channels* is a publication of Cray Research, Inc.)
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#### **Papers in Proceedings (89):**

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1. Stan Ahalt, Ray Idaszak (2015). "Scientific Software Success: Developing Metrics While Developing Community". WSSSPE3. September 2015.
2. Kum, H.C., and Ahalt, S. (2013). "Privacy-by-Design: Understanding Data Access Models for Secondary Data", American Medical Informatics Association (AMIA) joint summits on translation science: clinical research informatics.
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4. Hye-chung Kum, Stanley C. Ahalt, "Decoupled Data for Privacy Preserving Record Linkage with Error Management," *Proceedings of the First International Workshop on Security and Privacy in Social Networks*, Boston, MA, Oct. 9-11, 2011
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9. B. Guilfoos, S. Samsi, J. Chaves, J. Unpingco, J. Nehrbass, A. Chalker, S. Ahalt, A. Krishnamurthy. "Web interface for querying/searching RDF database," *Proceeding of the HPCMP Users Group Conference*, 2007.

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13. H. Li and S. Ahalt, "Hierarchical Institution for Video Annotation," *IEEE International Conference on Electro and Information Technology*, May, 2005, Lincoln, NE.
14. Yi Zhao, Ahalt, S.C., Jianyu Dong, "**Optimal Interleaving for 3-D Zerotree Wavelet Video Packets Over Burst Lossy Channels**" Proceedings. (ICASSP apos;05). IEEE International Conference on Acoustics, Speech, and Signal Processing, Volume 2, Issue , March 18-23, pp. 333 – 336, 2005.
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