Curriculum Vitae

Andreas Savva Spanias, Professor and Center Director
Director SenSIP Center and Industry Consortium (established as an NSF I/UCRC),
IEEE Life Fellow, Fulbright US Scholar
Senior Member National Academy of Inventors (NAI)
School of Electrical, Computer and Energy Engineering, ASU
Founder and Director, Sensors and Machine Learning (SensMACH), LLC

Education

- Ph.D. 1988, Dept. of Electrical and Computer Eng., West Virginia University (WVU).
- M.S. 1985, Dept. of Electrical and Computer Eng., WVU.
- B.S.E.E. 1983, Dept. of Electrical and Computer Eng., WVU.
- HTI Diploma, Nicosia Cyprus, 1979.

Professional Continuing Education

- MIT Certificate on "Leadership Skills for Engineering and Science Faculty," Massachusetts Institute of Technology, Short Programs, Cambridge, MS, June 2017.
- Harvard University, "Data Visualization: Conveying Information through Visual Representations," Harvard Continuing Education, Cambridge, MA, June 2018.

Areas of Teaching and Research

- Teaching: Digital Signal Processing, Speech Coding, Adaptive Signal Processing, Sensors and Machine Learning.
- Research: Signal Processing, Adaptive Filters, Speech Analysis, AI, Quantum Machine Learning, DSP Architectures.

Positions Held

- Aug. 2009-present, Director SenSIP Center and NSF I/UCRC Industry Consortium, Arizona State University.
- Director SensMACH LLC, 2019-present.
- Aug. 2014-present, Senior Sustainability Scientist, Global Inst. of Sustainability, ASU.
- Aug. 2003-2011, Founding Associate Director of School of Arts, Media and Engineering, ASU.
- Aug. 1997-present, Professor, School of Electrical, Computer and Energy Engineering, Arizona State University.
- Aug. 1993-July 1997 Associate Professor, Department of Electrical Engineering, Arizona State University.
- Aug. 1988-July 1993 Assistant Professor, Department of Electrical Engineering, Arizona State University.
- Aug 1983-Aug. 1988 Graduate Research Assistant, Funded by Naval Research Labs, Dept. of ECE, WVU.
- July 1979-August 1981, National Guard, Army Communications Specialist on RACAL Systems, Cyprus.

Honors, Awards, Memberships, Plenary Sessions

- 2025 IEEE Life Fellow.
- 2025 Named Fulbright US Scholar with an award from the US State Department
- 2024 Co-author SPIE conference paper that received the student best paper award on quantum machine learning
- 2024 Listed in Top 2% Global Scientist in list by Stanford University
- 2023 Co-author on SPIE conference publication that received the best paper award on deep learning research.
- 2023 Top 3% Rating for the IEEE ICASSP 2023 paper on Quantum Fourier transform signal analysis-synthesis
- 2019 Elected Senior Member of the National Academy of Inventors (NAI**),** August 2019
- 2019 Induction to National Academy of Inventors (NAI) ASU Chapter**,** April 2019.
- 2019 and 2020 Top 5% faculty in teaching award recipient, IAFSE Schools of Engineering, ASU, 2020.
- 2018 IEEE Region 6 (across 12 states) Award "For Outstanding Research and Education Contributions in Signal Processing."
- 2018 IEEE Phoenix Chapter Award "*For significant innovations and patents* in signal processing for sensor systems"

- 2015 Harden-Simmons Prize Paper Award on Power Amplifier Linearization Techniques.
- 2012 Premier Award for iJDSP iPhone software (received at IEEE FIE Seattle)
- 2004 IEEE Signal Processing Society, Elected Distinguished Lecturer in signal processing.
- 2005 IEEE Signal Processing Society Award for Meritorious Service (one of three major annual society awards).
- 2003 Elected IEEE Fellow for contributions in speech processing.
- 2002 IEEE Donald G. Fink Prize Paper Award from Board of Directors for paper "Perceptual Coding of Digital Audio."
- 2007 Best Paper Award, G. Wichert, H. Thornburg, A. Spanias et al, CBMI 2007, France 2007
- 1993 Award from Intel for "Leadership and Contributions in the Development of the Intel 60172 SP Architecture."

Text Books

- Andreas Spanias, Ted Painter, Venkatraman Atti, Audio Signal Processing and Coding, Hardcover 544 pages, ISBN: 9780471791478, Wiley, Textbook with theory, problems, and MATLAB exercises. March 2007.

- A. Spanias, Digital Signal Processing; An Interactive Approach – **2nd Edition**, 403 pages, ISBN 978-1-4675-9892-7, Lulu Press On-demand Publishers, Morrisville, NC, May 2014.

  Google Scholar: https://scholar.google.com/citations?user=IyRtNy0AAAAJ&hl=en
  Orcid ID 0000-0003-0306-9348

BOOKS - Lecture Series Research Books and Monographs with Springer

1. J. Foutz, A. Spanias, M. Banavar, Narrowband Direction of Arrival Estimation for Antenna Arrays, Synthesis Lectures on Antennas, Morgan & Claypool Publishers (**now with Springer)**, Ed. C. Balanis, ISBN-13: 978-1598296501, Aug. 2008.
2. Karthikeyan N. Ramamurthy, Andreas S. Spanias, MATLAB® Software for the Code Excited Linear Prediction Algorithm: The Federal Standard-1016, Morgan and Claypool Publishers (**now with Springer)**, Synthesis Lectures on Algorithms and Software in Engineering, Vol. 2, Pages 1-109: 1-109, ISBN 1608453847, Jan 2010.
3. J. Thiagarajan, A. Spanias, Analysis of the MPEG-1 Layer III (MP3) Algorithm Using MATLAB, Morgan and Claypool Publishers, Synthesis Lectures on Algorithms and Software in Engineering (**now with Springer)**, Vol. 3, No. 3, Pages 1-129, ISBN-10: 1608458016, ISBN-13: 978-1608458011, Nov. 2011.
4. H. Braun, C. Tepedelenlioglu, A. Spanias, M. Banavar, et al., Signal Processing for Solar Array Monitoring, Fault Detection, & Optimization, Power Electronics, Morgan & Claypool, (**now with Springer)**111 pages, ISBN 978-1608459483, Sep. 2012.
5. An Introduction to Kalman Filtering with MATLAB Examples, N. Kovvali, M.Banavar, A. Spanias Synthesis Lectures on Signal Processing, , Morgan & Claypool Publishers **(now with Springer**), Ed. J. Mura, v. 6, pp. 1-81, ISBN 13: 9781627051392, September 2013.
6. J. Thiagarajan, K. Ramamurthy, P. Turaga, A. Spanias, Image Understanding Using Sparse Representations,, Synthesis Lectures on Image, Video, and Multimedia Processing, Morgan & Claypool Publishers **(now with Springer**), ISBN 978-1627053594, 118 pages, Ed. Al Bovik, April 2014.
7. Steve Miller, Xue Zhang, Andreas Spanias, Multipath Effects in GPS Receivers, Synthesis Lectures on Communications, Morgan & Claypool Publishers **(now with Springer),** ISBN 978-1627059312, 70 pages, Ed. William Tranter, P. 1-70, 2015.
8. Xue (Sophia) Zhang, Cihan Tepedelenlioglu, Mahesh Banavar, Andreas Spanias, Node Localization in Wireless Sensor Networks, Synthesis Lectures on Communications, Morgan & Claypool Publishers (**now with Springer**), ISBN: 9781627054850, Ed. William Tranter, 68 Pages, December 2016.
9. S. Zhang, C. Tepedelenlioglu, A. Spanias, M. Banavar, Distributed Network Estimation using Consensus Methods, Synthesis Lectures on Communications, Morgan & Claypool Pub. **(now with Springer),** ISBN 9781681732909, Ed. W. Tranter, 2018.

10. H. Braun, P. Turaga, A. Spanias, S. Jayasuriya, Reconstruction Free Compressive Vision, Morgan & Claypool **(now with Springer)**, ISBN 978-1681735566, Ed. J. Mura, April 2019
11. S. Rao, S. Katoch, V. Narayanaswamy, G. Muniraju, C. Tepedelenlioglu, A. Spanias, P. Turaga, R. Ayyanar, and
12. D.Srinivasan, "Machine Learning for Solar Array Monitoring, Optimization, and Control," Synthesis Lectures on Power Electronics, Morgan & Claypool **(now with Springer),** Ed. J. Hudgins, Book, 91 pages, ISBN: 9781681739076, Aug. 2020.
13. U. Shanthamallu and A. Spanias, Machine and Deep Learning Algorithms and Applications, Morgan & Claypool **(now with Springer)**, Ed. J. Moura, December 2021.
14. Jaskie, Kristen, and Andreas Spanias. "Evaluating the Positive Unlabeled Learning Problem." In *Positive Unlabeled Learning*, pp. 35-46. Cham: Springer International Publishing, 2022.

BOOKS EDITED

- Whitmire, Scott A. "Engineer Your Software." *Synthesis Lectures on Algorithms and Software in Engineering* 11, Editor A. Spanias, no. 2 (2021): 1-143, ISBN: 978-1636391779, **(now with Springer)** 2021.
- Juan Andrade, A Survey of Blur Detection and Sharpness Assessment Methods, 113 pages, Morgan and Claypool Publishers **(now with Springer),** Editor A. Spanias, ISBN 9781636390505, Dec. 2020.
- I. Kyriakides, Cognitive Fusion for Target Tracking, Synthesis Lectures on Algorithms and Software in Engineering 10:1, 1-65, ISBN 978-1681736679, **(now with Springer**), Ed. A. Spanias, 2019.
- Vimal Kumar, Amartya Sen, Sanjay Madria, Secure Sensor Cloud, ISBN: 9781681734705, Editor A.Spanias, Synthesis Lectures, Morgan and Claypool Publishers **(now with Springer),** 140 pages, December 2018.
- M. Stanley and Jong Ming Lee, Sensors for IoT Applications, ISBN 9781627054638, Editor A. Spanias, Synthesis Lectures, Morgan and Claypool **Publishers (now with Springer),** 113 Pages, March 2018.
- Virtual Design of an Audio Lifelogging System: Tools for IoT Systems, Brian Mears and Mohit Shah, Ed. A. Spanias, Synth. Lectures on Algorithms and Software in Engineering, **(now with Springer),** Vol. 8, No. 1, Pages 1-73, June 2016.
- Despeckle Filtering for Ultrasound Imaging and Video, **Volume II**: Selected Applications, Second Edition, Christos P. Loizou, Constantinos S. Pattichis, (**now with Springer),** ISBN: 978-1627058148, August 2015.
- Despeckle Filtering for Ultrasound Imaging and Video, **Volume I:** Algorithms and Software, Second Edition C. Loizou , Constantinos S. Pattichis, **(now with Springer),** ISBN: 978-1627056687, April 2015.
- Latency and Distortion of EM Trackers for Augmented Reality, H. Himberg, Y. Motai, Synthesis Lectures on Algorithms, Morgan and Claypool Publishers **(now with Springer),** Ed. A. Spanias, 189 pages, ISBN 978-1627055079, May 2014.
- Bandwidth Extension of Speech Using Perceptual Criteria, Visar Berisha, Steve Sandoval, Julie Liss, Morgan & Claypool Publishers (now with Springer), Ed. A. Spanias, ISBN: 9781627053136, October 2013.
- Sparse Representations for Radar, Peter Knee, Morgan & Claypool Pub. **(now with Springer),**, Ed. A. Spanias, Oct. 2012.
- Theory and Applications of Gaussian Quadrature Methods, N. Kovvali, Morgan & Claypool **(now with Springer),**, Ed. A. Spanias, Sep.2011
- Venkatraman Atti, Algorithms and Software for Predictive and Perceptual Modeling of Speech, Morgan & Claypool Publishers **(now with Springer),** Series Editor A. Spanias, March 2011.
- Advances in Waveform-Agile Sensing for Tracking, Sandeep Prasad Sira, Antonia Papandreou-Suppappola, Darryl Morrell, Morgan & Claypool Publishers **(now with Springer),** Series Editor A. Spanias, 2008.
- Despeckle Filtering Algorithms and Software for Ultrasound Imaging, Christos P. Loizou, Constantinos S. Pattichis, Morgan & Claypool Publishers **(now with Springer),** Ed. A. Spanias, 2008.
- Adaptive High-Resolution Sensor Waveform Design for Tracking, Ioannis Kyriakides, Darryl Morrell, Antonia Papandreou-Suppappola, Ed. A. Spanias, Morgan and Claypool Publishers **(now with Springer**), 2010.
- OFDM Systems for Wireless Communications, A. Narasimhamurthy, M. Banavar, C. Tepedelenliouglu, Ed. A. Spanias, Morgan and Claypool Publishers **(now with Springer),** 2010.
- Advances in Modern Blind Signal Separation Algorithms: Theory and Applications, K. Kokkinakis, P. C. Loizou, Ed. A. Spanias, Morgan and Claypool Publishers **(now with Springer),** 2010.

US Patents (30 patents with Graduate Students mentored by Andreas Spanias (designated with +))

P.1. V. Berisha+ and **A. Spanias**, Split-Band Speech Compression Based On Loudness Estimation, **US 8,392,198,** Issued 2012.

P.2. H. Krishnamoorthi+ V. Berisha, **A. Spanias**, Method and system for determining an auditory pattern of an audio segment," **US 9,055,374**, Issued June 2015.

P.3. X. Zhang+, M. Banavar, C. Tepedelenlioglu, **A. Spanias**, Maximum Likelihood Localization in the Presence of Channel Uncertainties, **US Patent No. 9,507,011,** Issued Nov. 29, 2016.

P.4. B. Santucci+, M. Banavar+, C. Tepedeleioglu, **A. Spanias,** Energy-Efficient Distributed Estimation using Nonlinear Amplifiers **US 9,461,676,** Issued Oct. 2016.

P.5. J. Thiagarajan+, K. Ramamurthy+, D. Frakes, **A. Spanias**, Kernel Sparse Models for automated tumor segmentation, Patent **US 9,710,916,** Issued July 2017.

P.6. J. Jayaraman+, K. Ramamurthy+, D. Frakes, **A. Spanias**, An algorithm to estimate glomerular number from kidney magnetic resonance images, , **US 9,779,497**, Issued Oct. 2017.

P.7. J. Thiagarajan+, K. Ramamurthy+ P. Sattigeri+, **A. Spanias**, Recovering Degraded Images using Ensemble Sparse Models, **US 9,875,428**, January 2018.

P.8. **A. Spanias**, G. Kalyanasundaram+, Fast Computation of Excitation Pattern, Auditory Pattern and Loudness, **US 10013992B2,** Issued July 2018.

P.9. X. Zhang+, M. Banavar, C. Tepedelenlioglu, **A. Spanias**, Distributed location detection in wireless sensor networks, **US 10,028,085,** Issued July 2018.

P.10. H. Braun+, P. Turaga, **A. Spanias,** C. Tepedelenlioglu, Methods, Apparatuses, and Systems for Reconstruction-Free Image Recognition from Compressive Sensors, **US 10,387,751**, Issued August 2019.

P.11. S. Zhang+, Tepedelenlioglu, **A. Spanias,** Distributed Network Center Area Estimation, **US 10,440,553,** Issued 2019.

P.12. S. Katoch+, P. Turaga, A. Spanias**,** C. Tepedelenlioglu, P. Turaga Systems and methods for skyline prediction for cyber-physical photovoltaic array control, , **US Patent 11,132,551**, Issued Sept. 2021.

P.13. H. Song+, V. Berisha, **A. Spanias,** M.Willi, J. Thiagarajan, Systems and methods for a triplet network with attention for speaker diarization, **US Patent 11,152,013**, Issued Oct. 2021.

P.14. Gowtham Muniraju+, **A. Spanias,** Cihan Tepedelenlioglu, Analysis and Design of Robust Max Consensus for Wireless Sensor Networks, **US 11,490,286,** Issued 2022.

P.15. S. Jayasuriya, P. Turaga, **A. Spanias,** S. Katoch+, D. Mohan Adaptive Video Subsampling For Energy Efficient Object Detection, **US 11,481,881**, Issued 2022.

P.16. U. Shanthamallu+, **A. Spanias**, J. Thiagarajan, Graph Attention Models for Multi-layered Embeddings and Deep Learning Applications, **US 11,526,765,** Issued Dec. 2022.

P.17. Huan Song+, **A. Spanias,** J. Thiagarajan, Systems and Methods for Customizing Kernel Machines with Deep Neural Networks, **US Patent 11,586,905,** Issued February 2023.

P.18. V. Narayanaswamy+, **A. Spanias,** R. Ayyanar, C. Tepedelenlioglu, Systems and Methods For Connection Topology Optimization In Photovoltaic Arrays Using Neural Networks, **US Patent 11,616,471**, Issued March 2023.

P.19. S. Rao+, **A. Spanias**, C .Tepedelenlioglu, Solar Array Fault Detection, Classification and Localization Using Deep Neural Nets, **US 11,621,668,** Issued April 2023**.**

P.20. S. Katoch+, P. Turaga, **A. Spanias,** C. Tepedelenlioglu Systems and methods for skyline prediction for cyber-physical photovoltaic array control, **US Patent 11,694,431,** Issued July 2023.

P.21. Huan Song+, **A. Spanias**, Jayaraman Thiagarajan, Deepta Rajan+Methods for Time Series Analysis Using Attention Models, , **US Patent 11,699,079**, Issued July 2023.

P.22. G. Muniraju+, C Tepedelenlioglu, **A. Spanias,** "Systems and Methods for Consensus-Based Distributed Graph Spectral Radius Distribution," **US. patent 11,765,609**, Issued Sept. 2023.

P.23. U. Shanthamallu+, **A. Spanias**, J. Thiagarajan, Systems and Methods Graph Attention Models for Multi-layered Embeddings and Deep Learning Applications, **US 11,769,055**, Issued Sept. 2023.

P.24. R Anirudh, V. Narayanaswamy+, **A. Spanias**, J. Thiagarajan "Systems and Methods for Unsupervised Audio Source Separation Using Generative Priors," US **11,783,847**, Issued Oct. 2023.

P.25. Odrika Iqbal+, **A. Spanias,** Suren Jayasuriya, "**Tracking-Based Motion Deblurring via Coded Exposure," US 11,880,984,** Issued January 2024.

P.26. Sameeksha Katoch, Vivek Narayanaswamy+, **A. Spanias**, Jayaraman Thiagarajan+,Systems and Methods Audio Source Separation via Multi-Scale Feature Learning, **US 11,929,086,** Issued 2024.

P.27. Jie Fan+, Gowtham Muniraju+, Sunil Rao+, **A. Spanias,** C. Tepedelenlioglu, Systems and Methods for Fault Classification in Photovoltaic Arrays using Graph Signal Processing**, U.S. 12,244,266,** Issued March 2025.

P.28. S. Jayasuriya, O. Iqbal, **A. Spanias,** Tracking-based motion deblurring via coded exposure –**US-12437419-B2**, Issued 2025.

P.29. **A. Spanias**, Song+; H, Thiagarajan; J. J. Rajan; D., Systems and methods for time series analysis using attention models, **US 20230342611 A1**, Issued May 2025.

P.30. K Jaskie+, J. Martin+, **A. Spanias,** "Systems and Methods for Photovoltaic Fault Detection using a Feedback-Enhanced Positive Unlabeled Learning, **US 12,699,918,** August 4, 2026.

P.31. Vivek Narayanaswamy+, Raja Ayyanar, **Andreas Spanias**, Cihan Tepedelenlioglu, Systems And Methods For Connection Topology Optimization In Photovoltaic Arrays Using Neural Networks, **U.S. 12,756,190**, October 6, 2026.

(In addition, more than 10 provisional patents. Several patent applications were filed in the last 3 years.)

Publications

Refereed Archival Journal Papers

Published or Accepted for Publication (> 120 published - 100 listed below)

1. L. Miller+, G. Uehara, N. Babar and A. Spanias, "Image Fusion with Quantum Processing for Scene Classification using the BigEarthNet Dataset," pp. 86764 – 86776, Vol. 14, *IEEE Access,* June 2026
2. A. Kwasinski , M. Pattichis , A. Bovik , E. Delp , A. Katsaggelos , A. Scaglione , S. Gannot , A. Spanias , G. Cheung , M. Haardt , and J. M. F. Moura, "Lessons From Two Roundtables on Artificial Intelligence and Signal Processing Education: Addressing the emergence of a new era and a new discipline, " Special Issue on Artificial Intelligence for Education: A Signal Processing Perspective, *IEEE Signal Processing magazine,* Volume: 42 Issue: 6, pp. 39-50, Jan. 2026. DOI: 10.1109/MSP.2025.3581871
3. Anjapuli, L.S., S., Patel+, B., Banavar, M.K., Tepedelenlioglu, C., Spanias, A., Schuckers, S. and Achalla, M., 2026. Stability Analysis of a Modified SEIRS Compartmental Model for Infectious Diseases. *IEEE Access*, *14*, pp.10499-10509.

4. N. Babar+, J. Lateef, S. Syed, J. Dietlmeier , N.. O'Connor, G. Raupp, A. Spanias, "Brain Tumor Classification In MRI Scans Using Edge Computing and a Shallow Attention-Guided CNN," MDPI Biomedicine, Special Issue, Advances in Brain Tumor Diagnosis, *Biomedicines Oct.* **2025**, *13*, 2571.
5. N. Nguyen, A. Hendricks, E. Montoya, A. Mayers, D. Rajmohan, A. Morrin, M. McCaul, N. Dunne, N.'Connor, A. Spanias, G. Raupp, and E. Forzani. 2025. "New Imaging Method of Mobile Phone-Based Colorimetric Sensor for Iron Quantification" *Sensors* 25, no. 15: 4693. https://doi.org/10.3390/s25154693
6. A. Sharma+, G. Uehara+, C. Wang, J. Larson, W. Barnard, A. Spanias, Education Software Development for Undergraduate Exposition on the use of Quantum Fourier Transforms in Signal Analysis , *IEEE Transactions on Education*, October 2025
7. Uehara+, G. S., and A. Spanias. "Photovoltaic fault classification by leveraging quantum entanglement and correlation." *Intelligent Decision Technologies* (2025): 18724981251332137, Sage Publications, Volume 19, Issue 3, 2025. https://doi.org/10.1177/18724981251332137
8. Malu+, M., Dow, D., Sharma, P., Cottam, A., Binggeli, M., Dasarathy, G., Pedrielli, G. and Spanias, A., 2025. High dimensional Bayesian optimization for circuit design. *Intelligent Decision Technologies*, p.18724981251328140.
9. Akhlak U. Mahmood, Alexey V. Gulyuk and Yaroslava G. Yingling, North Minhazul Islam, Emily Briese, Carmen A. Velasco, Mohit Malu+, Naushita Sharma, Andreas Spanias and Paul Westerhoff, **"**Multiple Data Imputation Methods Advance Risk Analysis and Treatability of Co-occurring Inorganic Chemicals in Groundwater, Nov. 7, *Environmental Science & Technology*, *DOI*: 10.1021/acs.est.4c05203
10. S. Katoch+, O. Iqbal+, A. Spanias and S. Jayasuriya, "Energy-Efficient Object Tracking Using Adaptive ROI Subsampling and Deep Reinforcement Learning," in *IEEE Access*, vol. 11, pp. 41995-42011, 2023.
11. V. Narayanaswami+, R. Ayyanar, A. Spanias, C. Tepedelenlioglu*, "Reconfiguring Photovoltaic Arrays for Maximum Power Output Extraction using Neural Networks," IEEE Access, January 2023*
12. Jayasuriya, S., Iqbal+, O., Kodukula, V., Torres, V., LiKamWa, R. and Spanias, A, "Software-Defined Imaging: A Survey, *Proc. IEEE,* Vol. 11, Issue 5, pp. 445 - 464 April 2023.
13. O. Iqbal+, V. Torres Muro, S. Katoch; A. Spanias, Suren Jayasuriya, "Adaptive Subsampling for ROI-Based Visual Tracking: Algorithms and FPGA Implementation," *IEEE Access,* Vol. 10, pp. 90507 – 90522, Aug. 2022.
14. S. Rao+, G. Muniraju,+ C. Tepedelenlioglu, D. Srinivasan, G. Tamizhmani and A. Spanias, "Dropout and Pruned Neural Networks for Fault Classification in Photovoltaic Arrays, pp. 120034-120042, *IEEE Access*, 2021.
15. S. Rao+, V. Narayanaswamy+, M. Esposito, J. Thiagarajan, A.Spanias, "COVID-19 detection using cough sound analysis and deep learning algorithms," Intelligent Decision Technologies, IOS Press, vol. 15, pp. 655-665, Jan. 2022.
16. P. Sattigeri+, J. Thiagarajan, K. Ramamurthy, A. Spanias, M. Banavar, A. Dixit, J. Fan, M. Malu, K. Jaskie, S. Rao, U. Shanthamallu, V. Narayanaswamy, S. Katoch, "Instruction Tools for Signal Processing and Machine Learning for Ion-Channel Sensors", International Journal of Virtual and Personal Learning Environments (IJVPLE): Volume 12, Issue 1, Article 12, July 2021.
17. K. Jaskie+, J. Martin, and A. Spanias, "PV Fault Detection using Positive Unlabeled Learning," Applied Sciences, vol. 11, Jun. 2021.
18. G. Muniraju+, G. Kailkhura, J. Thiagarajan, Jayaraman J.; Bremer, Peer-Timo; Tepedelenlioglu, Cihan; Spanias, Andreas, "Coverage-Based Designs Improve Sample Mining and Hyper-Parameter Optimization" *IEEE Trans. NNLS-2019*-P-11125.R1, 2020.
19. G. Muniraju,+, C. Tepedelenlioglu, and A. Spanias, "Analysis and design of robust max consensus for wireless sensor networks," *IEEE Transactions on Signal and Information Processing over Networks*, pp. 779-791, V. 5, Dec. 2019.
20. G. Muniraju+, C. Tepedelenlioglu, and A. Spanias, "Consensus Based Distributed Spectral Radius Estimation," in *Proceeding of IEEE Signal Processing Letters*, pp. 1–5, June 2020.
21. U. Shanthamallu+, J. Thiagarajan, H. Song+, A. Spanias, "GrAMME: Semi-Supervised Learning using Multi-layered Graph Attention Models," *IEEE Transactions on Neural Networks and Learning Systems,* pp. 1-12, Nov. 2019.

22. J. Zuniga-Mejia1, R. Villalpando-Hernandez, C. Vargas-Rosales, A. Spanias, "A Linear Systems Perspective on Intrusion Detection for Routing in Reconfigurable Wireless Networks", *IEEE Access,* V.7, pp. 60486-60500, Dec. 2019.

23. V. Berisha, A. Wisler+, A. Hero, A. Spanias, "Data-driven estimation of density functionals using a polynomial basis" *IEEE Transactions on Signal Processing*, pp. 558-572, Vol. 66, January 2018.

24. M. Shah+, M. Tu, V. Berisha, C. Chakrabarti, A. Spanias, "Articulation Constrained Learning with Application to Speech Emotion Recognition," *Computer Speech and Language*, Elsevier, 2019.

25. X. Zhang+, C. Tepedelenlioglu, M. Banavar, A. Spanias, G. Munariju, "Location estimation and detection in wireless sensor networks in the presence of fading," *Physical Communication*, Elsevier, Vol. 32, pp. 62-74, Feb. 2019.

26. H. Song, J. Thiagarajan, P. Sattigeri, A. Spanias, "Optimizing Kernel Machines using Deep Learning" *IEEE Transactions on Neural Networks and Learning Systems,* NLS-2017-P-8053.R1, pp. 5528–5540, Feb. 2018.

27. S. Zhang+, C. Tepedelenlioglu, M.K. Banavar and A. Spanias, "Distributed Node Counting in Wireless Sensor Networks in the Presence of Communication Noise," *IEEE Sensors Journal*, pp. 1175 - 1186, Vol. 17, Feb. 2017.

28. S. Zhang+, C. Tepedelenlioğlu, A. Spanias, "Distributed Network Center and Size Estimation," *IEEE Sensors Journal*, Volume: 18 , Issue: 14, pp. 6033 - 6045, 2018.

29. S. Zhang, C. Tepedelenlioglu, M.K. Banavar and A. Spanias, "Max Consensus in Sensor Networks: Non-linear Bounded Transmission and Additive Noise," *IEEE Sensors Journal*, Vol.16, pp. 9089-9098, Dec. 2016.

30. V. Berisha, A. Wisler+, A. Hero, A. Spanias, "Empirically Estimable Classification Bounds Based on a Nonparametric Divergence Measure," *IEEE Transactions on Signal Processing,* vol. 64, no. 3, pp.580-591, Feb. 2016.

31. H. Braun+, S. T. Buddha+, V. Krishnan+, C. Tepedelenlioglu, A. Spanias, M. Banavar, and D. Srinivansan, "Topology reconfiguration for optimization of photovoltaic array output," *Elsevier Sustainable Energy, Grids and Networks* (*SEGAN),* pp. 58-69, Vol. 6, June 2016.

32. M. Shah+, C. Chakrabarti and A. Spanias, "Within and cross-corpus speech emotion recognition using latent topic model-based features", *EURASIP Journal on Audio, Speech, and Music Processing*, 2015:4, January 2015.

33. S. Sandoval, R. Utianski, V. Berisha, J. Liss, A. Spanias, "Feature divergence of pathological speech," *The Journal of the Acoust. Society of America*, 134(5):4133. DOI:10.1121/1.4831182, 11/2013.

34. V. Berisha, S. Sandoval, R. Utianski, J. Liss, and A. Spanias, "Characterizing the distribution of the quadrilateral vowel space area," *J. Acoust. Soc. Am.,* pp. 421-427, Feb. 2014.

35. R. Santucci+, M. Banavar+, C. Tepedelenlioglu, A. Spanias, "Nonlinear Amplify and Forward Distributed Estimation over Non-Identical Channels," *IEEE Transactions on Vehicular Technology*, Issue: 9, 2015.

36. M. Banavar, C. Tepedelenlioglu, A. Spanias, "Robust Consensus in the Presence of Impulsive Channel Noise," *IEEE Trans. on Signal Processing*, Vol. 63, pp. 2118-2129, March 2015.

37. R. Santucci+, M. K. Banavar+, A. Spanias, and C. Tepedelenlioglu, "Energy-efficient distributed estimation by utilizing a nonlinear amplifier," *IEEE Transactions on Circuits and Systems – I*, vol. 61, no. 1, pp. 302-311, January 2014.

38. J. Thiagarajan+, K. Ramamurthy+, A. Spanias, "Learning Stable Multilevel Dictionaries for Sparse Representations, *IEEE Trans. on Neural Networks and Learning Systems,* .Vol. 23, pp. 2905–2915, 2014.

39. B. Santucci+ and A. Spanias, "Java-DSP Functions for Power Amplifier Linearization Techniques," *ASEE Computers in Education Journal*, Full paper, 2014. **Winner of the Harden-Simons Prize Award** 2014

40. Thiagarajan+, J.J., Ramamurthy+, K.N., Spanias, A. , "Multiple Kernel Sparse Representations for Supervised and Unsupervised Learning, " *IEEE Transactions on Image Processing*, pp. 2905- 2915, 23(7), 2015.

41. Dasarathan, S. ; Tepedelenlioglu, C. ; Banavar+, M. ; Spanias, "Non-Linear Distributed Average Consensus Using Bounded Transmissions," *IEEE Trans. on Signal Processing*, vol. 61, no. 23, Dec. 2013.

42. X Bi, S Lee, JF Ranville, P Sattigeri+, A Spanias, P Herckes, P Westerhoff, "Quantitative resolution of nanoparticle sizes using single particle inductively coupled plasma mass spectrometry with the K-means clustering algorithm," *Journal of Analytical Atomic Spectrometry*, 29 (9), pp. 1630-1639, 2014.

43. S. Sandoval, V. Berisha, R. Utianski, J. Liss, A. Spanias, "Automatic assessment of vowel space area*" J. Acoust. Soc. Am*., Vol 134, El1-El5, Nov. 2013.

44. A. Fink+, A. Spanias, P. Cook, "Derivation of a new banded waveguide model topology for sound synthesis," *J. Acoust. Soc. Am.,* Volume 133, Issue 2, pp. EL76-EL81 (2013).

45. J. Jayaraman+, K. Ramamurthy+, A. Spanias, D. Frakes,A. Puri, D. Rajan, Ms. No. IJAIT-D-13-00030 Kernel Sparse Models for Automated Tumor Segmentation, *International Journal on Artificial Intelligence Tools*, 2014.

46. M. Banavar+, C. Tepedelenlioglu, A. Spanias, "Distributed SNR Estimation with Power Constrained Signaling over Gaussian Multiple-Access Channels," *IEEE Transactions on Signal Processing*, V.60, Issue: 6, pp. 3289-3294, 2012.

47. M.K. Banavar+, A.D. Smith, C. Tepedelenlioglu, A. Spanias, "On the Effectiveness of Multiple Antennas in Distributed Detection over Fading MACs", *IEEE Trans. Wireless Communications*, Volume: 11 , 5, pp. 1744-1752, May 2012.

48. J. J. Thiagarajan+, K. N. Ramamurthy+ and A. Spanias, "Discriminative clustering for mixing matrix estimation in blind source separation," Elsevier, Digital Signal Processing, Volume 23, Issue 1, January 2013, Pages 9-18

49. Karthikeyan Natesan Ramamurthy+; Jayaraman J. Thiagarajan+; Andreas Spanias, "Recovering non-negative and combined sparse representations," Digital Signal Processing: A Review Journal, 26(1):pp. 21-35. 2014;

50. M. D. Shirsat, T. Sarkar, J. Kakoullis, Jr., N. V. Myung,, B. Konnanath+, A. Spanias, and A. Mulchandani, "Porphyrin-Functionalized Single-Walled Carbon Nanotube Chemiresistive Sensor Arrays for VOCs,"J. Phys. Chem. C, 2012, 116 (5), pp 3845–3850, January 11, 2012.

51. M.K. Banavar+, A.D. Smith, C. Tepedelenlioglu, A. Spanias, "On the Effectiveness of Multiple Antennas in Distributed Detection over Fading MACs", *IEEE Transactions on Wireless Communications*, V.11 , 5, pp. 1744-1752, May 2012.

52. H. Kim, B. Konnanath+, P. Sattigeri+, J. Wang, A. Mulchandani, N. Myung, Marc A. Deshusses, A. Spanias and B. Bakkaloglu, "Electronic-nose for detecting environmental pollutants: signal processing and analog front-end design Analog Integrated," *Circuits and Signal Processing*, Volume 70, Number 1, 15-32, Jan 2012.

53. C. Tepedelenlioglu, M.K. Banavar+, A. Spanias, "On the Asymptotic Efficiency of Distributed Estimation Systems With Constant Modulus Signals Over Multiple-Access Channels," *IEEE Transactions on Information Theory*, vol.57, no.10, pp.7125-7130, Oct. 2011.

54. L. Ravichandran+, L.; A. Papandreou-Suppappola, A.; Spanias, A, Lacroix, Z.; Legendre, C., "Waveform Mapping and Time-Frequency Processing of DNA and Protein Sequences," *IEEE Transactions on Signal Processing*, Volume: 59 , Issue: 9, pp. 4210 – 4224, 2011.

55. K. Ahmed+, C. Tepedelenlioglu, A. Spanias, M. Patwary, M. Yu, H., Error probability-based optimal training for linearly decoded orthogonal space-time block coded wireless systems, Communications, IET Volume: 5 , Issue: 11, pp. 1512-1529, 2011.

56. Ramamurthy+, K..; Thiagarajan+, J.; Sattigeri+, P.; Goryll, M.; Spanias, A.; Thornton, T.; Phillips, S. M.;, "Transform domain features for ion-channel signal classification," *Biomedical Signal Processing and Control*, Oct. 2010.

57. M. K. Banavar+, C. Tepedelenlioglu and A. Spanias, "Estimation over fading channels with limited feedback using distributed sensing," *IEEE Transactions on Signal Processing*, vol. 58, no. 1, pp. 414-425, January 2010.

58. Wichern+, G.; Jiachen Xue; Thornburg, H.; Mechtley+, B.; Spanias, A.;, "Segmentation, Indexing, and Retrieval for Environmental and Natural Sounds *IEEE Transactions on Audio, Speech, and Language Processing*, Volume: 18, Issue: 3 Publication Year: 2010 , Page(s): 688 – 707, 2010,

59. H. Krishnamoorthi+, A. Spanias and V. Berisha, "A frequency/detector pruning approach for loudness estimation*," IEEE Signal Processing Letters,* vol. 16, no.11, pp. 997 - 1000 , Dec. 2009.

60. H. Kwon+, V. Berisha+, A. Spanias, V. Atti+, "Experiments with Sensor Motes and Java-DSP*," IEEE Transactions on Education,* vol. 52, issue 2, pp. 257-262 , 2009

61. S. Sabesan, L Good, K. Tsakalis, A. Spanias, D. Treiman, L. Iasemidis, "Information flow and application to epileptogenic focus localization from intracranial EEG", *IEEE Trans. Neural Syst. and Rehab. Eng., pp. 244-253, June 2009*

62. V. Berisha+ and A. Spanias, "Wideband Speech Recovery Using Psychoacoustic Criteria," *EURASIP Journal on Audio, Speech, and Music Processing*, Volume 2007, Article ID 16816, 18 pages, doi:10.1155/2007/16816, August 2007.

63. V. Atti[+], A. Spanias, K. Tsakalis. C. Panayiotou[+], V. Berisha[+], L. Iasemidis, *"*Gradient projection-based channel equalization under sustained fading*," EURASIP Signal Processing, SIGPRO 3303*, *Signal Processing*, 88 (2), p.236-246, February 2008.

64. S. Miller+ and A. Spanias, "Algorithms for Quotient Control in Beamforming", *IEEE Antennas and Wireless Propagation Letters* , Volume 6, pp. 651-654, December 2007.

65. K. Ahmed[+], C. Tepedelenlioglu, A. Spanias, "Performance of precoded OFDM with channel estimation error," *IEEE Transactions on Signal Processing,* Volume 54, Issue 3, pp. 1165 – 1171, March 2006.

66. A. Spanias, K. Huang, R. Ferzli, H. Kwon[+], V. Atti[+], V. Berisha[+], L. Iasemides, H. Krishnamoorthi[+], P. Spanias, S. Misra[+], M. Banavar[+], K. Tsakalis, S. Haag, "Interfacing Java-DSP with a TI DSK board," *COE Journal*, Vol. XVII, No. 3, Invited, July-Sep. 2007.

67. N. Chakravarthy[+], K. Tsakalis, L. Iasemidis and A. Spanias, "A multi-dimensional scheme for controlling unstable periodic orbits in chaotic systems," *Physics Letters A*, Vol. 349, pp. 116-127, Feb. 2006.

68. T. Painter[+], A. Spanias, A., "Perceptual segmentation and component selection for sinusoidal representations of audio," *IEEE Transactions on Speech and Audio Processing*," Volume 13, Issue 2, pp. 149-162, March 2005.

69. B. Veeramani[+], B. Narayanan, A. Prasad, L.D. Iasemidis, A.S. Spanias, K. Tsakalis, "Measuring the direction and the strength of coupling in nonlinear Systems - a modeling approach in the State space," *IEEE Signal Processing Letters*, Volume 11, Issue 7, pp. 617 - 620, July 2004.

70. A. Spanias, V. Atti [+], K. Ahmed, A. Papandreou-Suppappola, M. Zaman, and T. Thrassyvoulou "On-line signal processing using J-DSP," *IEEE Signal Processing Letters*, Volume: 11 , Issue: 10 , pp. 821 – 825, Sept. 2004.

71. N. Chakravarti[+], A. Spanias, K. Tsakalis, and L. Iasemides, "AR Modeling of DNA sequences," *EURASIP JASP - Special Issue on Signal Processing Genomics*, Vol. 2003, Issue 4, pp. 15-20, January 2004.

72. G. Nair[+] and A. Spanias,"The Eigenspace Projection Algorithm," *Signal Processing*, pp. 1929-1935, Vol. 83, 2003

73. J. Foutz[+], A. Spanias, S. Bellofiore and C Balanis, " Adaptive Eigen-Projection Beamforming Algorithms for 1-D and 2-D Antenna Arrays, *IEEE Antennas and Propagation Letters*, Vol. 83, pp. 1929-1935, 2003.

74. S. Bellofiore, J. Foutz[+], C. Balanis, A,S, Spanias, T, Duman, J, Capone "Smart Antennas for Mobile adhoc Networks, *IEEE Trans. on Antennas and Propagation*, pp. 571-581, Vol. 50, No. 5, May 2002

75. Ted Painter[++] and Andreas S. Spanias, "Perceptual Coding of Digital Audio," *Proceedings of the IEEE*, pp. 451-513, Vol. 88, No.4, April 2000 (**winner of field series 2002 IEEE Donald G. Fink Prize Paper Award – 1400+ citations**).

76. S. Bellofiore, C. Balanis, J. Foutz, and A,S, Spanias, "Smart Antennas Systems for Mobile Communications Networks: Part 1: Overview of the Antenna Design," *IEEE Antennas and Propagation Magazine,* pp. 145-154, No. 3, June 2002.

77. A. Kitsios[+,] A. Spanias, and B. Welfert, "Fast modified covariance algorithm with individual step sizes," Signal Processing 82(5), pp. 715-7120, June 2002.

78. S. Ahmadi[+] and A. Spanias, "Algorithms for Low-bit rate sinusoidal coding," *Speech Communications, 34(2001), pp. 369-390, June 2001.*

79. Min-Tau Lin[+], A. S. Spanias, and P. Loizou[+], "Speech Recognition Using Minimum Error Classification," *Speech Communication*, vol. 30, pp. 27-36, January 2000.

80. S. Ahmadi[+] and A.S. Spanias, "Cepstrum-Based Pitch Detection Using a New Statistical V/UV Classification Algorithm**,"** *IEEE Trans. on Speech and Audio*, Vol. 7, No. 3, pp. 333-338, May 1999.

81. P. Loizou[+] and A.S. Spanias, "Improved speech recognition using a subspace projection approach*," IEEE Trans. on Speech and Audio*, vol. 7, no. 3, pp. 343-345, May 1999.

82. S. Ahmadi[+] and A.S. Spanias, "A New Phase Model for Sinusoidal Transform Coding of Speech," *IEEE Trans. on Speech and Audio*, vol. 6, no. 5, pp. 495-501, Sept. 1998.

83. M. Deisher[+] and A.S. Spanias, "Speech Enhancement using state-bases estimation and sinusoidal modeling," *Journal of Acoustical Society of America*, vol. 102(2), pp. 1141-1148, Aug. 1997.

84. P. Loizou+ and A. Spanias, "High Performance Alphabet Recognition," *IEEE Trans. on Speech and Audio,* vol. 4, no. 6, pp. 439-445, Nov. 1996.

85. P. Loizou+ and A. Spanias, "Improving discrimination of confusable words using the divergence measure," *Journal of Acoustical Society of America*, Vol, 101(2), pp. 1106-1111, Feb. 1997.

86. K. Tsakalis, M. Deisher+, and A. Spanias, "System Identification Based on Bounded Error Constraints, *IEEE Transactions on Signal Processing*, Vol. 43, No. 12, pp. 3071-3075, Dec. 1995.

87. P. Loizou+, M. Dorman, and A. Spanias, "Automatic recognition of syllable-final nasals preceded by e," *Journal of Acoustical Society of America*, Vol. 97(3), pp. 1925-1928, March 1995.

88. A.S. Spanias, "Speech Coding: A Tutorial Review," *Proceedings of the IEEE*, Vol. 82, No. 10, pp. 1441-1582, October 1994 (700+ Google citations as of 10/2025).

89. M. Deisher+ and A.S. Spanias, "Practical Considerations in the Implementation Frequency-Domain Adaptive Noise Cancellation," *IEEE Transactions on Circuits and Systems*, Part II: Analog and Digital Signal Processing, Vol. 41, No. 2, pp. 164-168, Feb. 1994.

90. A. Spanias, M. Deisher+, P. Loizou+, G. Lim+, and B. Mears, "A New Highly Integrated Architecture for Speech Processing and Communication Applications," *Intel Technology Journal - Special Issue on Computer Supported Cooperation*, pp. 41-56, Spring 1994.

91. A.S. Spanias, *IEEE Transactions on Signal Processing*, "A Block Time and Frequency Modified Covariance Algorithms for Spectral Analysis," vol. 41, No. 11, pp. 3138-3153, Nov. 1993.

92. A. Spanias, P. Loizou+, G. Lim+, Y. Chen+, G. Hu+, "Analysis/Synthesis of Speech using the Short-Time Fourier Transform and a Time-varying ARMA process," *Trans. of the Institute of Electronics, Information and Communication Engineers (IEICE)*, Vol. E76-A, No. 4, pp. 645-652, April 1993.

93. A.S. Spanias and P.C. Loizou+, "A Mixed Fourier/Walsh Transform Scheme for Speech Coding at 4 KBPS," *Proc. IEE-Part I (Communications, Speech, and Vision)*, Vol. 139(5), pp. 473-481, Oct. 1992.

94. A.S. Spanias, S.B. Jonsson+ and S.D. Stearns, "Transform Methods for Seismic Data Compression," *IEEE Trans. on Geoscience and Remote Sensing*, Vol. GARS-29, No. 3, pp. 407-417, May 1991.

95. A.S. Spanias, "A Hybrid Transform Method for Speech Analysis and Synthesis," *Signal Processing*, Vol. 24, pp. 217-229, Aug. 1991.

96. W.B. Mikhael and A.S. Spanias, "Accurate Representation of Time-Varying Signals using Mixed Transforms with Applications to Speech," *IEEE Trans.on Circuits and Systems*, Vol. 36, No. 2, pp. 329-331, Feb. 1989.

97. W.B. Mikhael and A.S. Spanias, "Efficient Modeling of Dominant Transform Components Representing Time-Varying Signals," *IEEE Trans. on Circuits and Systems*, Vol. 36, No. 2, pp. 331-334, Feb. 1989.

98. W. Mikhael and A. Spanias, "A Fast Frequency-Domain Adaptive Algorithm," *Proc. IEEE*, V. 76, pp. 80-82, Jan. 1988.

99. W.B. Mikhael and A.S. Spanias, "Comparison of Several Frequency-Domain LMS Algorithms," *IEEE Trans. on Circuits and Systems*, Vol. 34, No. 5, pp. 586-588, May 1987.

100. W.B. Mikhael, A.S. Spanias, G. Kang and L. Fransen,"A Two-Stage Pole-Zero Predictor," *IEEE Trans. on Circuits and Systems*, Vol. 33, No. 3, pp. 352-354, March 1986.

Refereed Papers in Conference Proceedings (>350 papers / 102 listed below)

1. N. Goyal, G. Uehara, and A. Spanias, "Configurable Algorithms for Histopathologic Cancer Detection on Quantum Hardware," *Asilomar Conference on Signals, Systems, and Computers*, Monterey, October 2026.
2. T. Patel+, T. Hodges, G. Uehara, S. Samanta D. Wang, A. Ferenczi, A. Spanias. "Quantum-Hybrid Deep Learning Ensemble for Credit Card Fraud Detection, *2026 IEEE International Conference on AI and Data* Analytics (ICAD 2026), Boston June 2026.
3. David F. Ramirez+, T. L. Overman, K. Jaskie, J. Marvin, A. Spanias, "*SAR-RAG ATR Visual Question Answering by Semantic Search, Retrieval, and MLLM Generation*," *SPIE Defense and Commercial Sensing*," April 2026. **(Best student paper award)**
4. Tanay Kamlesh Patel+, Todd Hodges, Glen Uehara, Sutapa Samanta Dagen Wang, Andras Ferenczi, Andreas Spanias. Quantum Machine Learning Algorithms for Credit Card Fraud Detection, *17th IEEE IISA 2026*, Rhodes, July 2026.
5. N. Goyal+, G. Uehara+, A. Spanias, "Quantum-Enhanced Cancer Detection for Histopathologic Images" *Proc. IEEE ICIP 2025*, Alaska, Sept. 2025.

6. D. F. Ramirez+, T. Overman, K. Jaskie, M. Kleine, A. Spanias, "Towards a Large Language-Vision Question Answering Model for MSTAR Automatic Target Recognition," *SPIE Defense and Commercial Sensing*," Florida, April 2025.
7. S. Katoch+, D. Pujara+, D. Ramirez+, P. Turaga, C. Tepedelenlioglu, D. Srinivasan, and A. Spanias, "Irradiance Forecasting for Photovoltaic Systems using a Temporal Convolutional Network*," 2026 IEEE International Conference on Industrial Cyber-Physical Systems (ICPS)*, Perth, Australia, May 11-14, 2026.
8. D. Pujara+, M. Hansen, N. A. Babar+, D. Srinivasan, C. Tepedelenlioglu, and A. Spanias, "Embedded Hardware and Edge ML Algorithms for Real-time PV Fault Detection," *IEEE 17th IISA 2026*, Rhodes, July 2026.
9. Patel, T.K., Babar, N.A., Pujara, D., Uehara, G., Larson, J. and Spanias, A., 2026, May. Training Students for Research with Quantum AI Simulation Tools. In *ICASSP 2026-2026 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 20591-20595). IEEE.
10. Mohit Malu+, Qinyuan Dai, Xurxo Rigueira, Minhazul Islam, Tianfang Xu, Paul Westerhoff, Andreas Spanias. "Ground Water Quality Assessment using Quantum Machine Learning", *IEEE 17th IISA 2026* July 2026
11. S. Vittal+, D. Ramirez, G. Uehara, G. DeLuca, A. Spanias, Quantum Generative Neural Networks for Imaging Application," Generative Quantum Neural Networks," 16th *IEEE IISA 2025*, Mytilene, July 2025.
12. G. Miller, P. Konstantinov, G.Uehara, G. J. Tearneyc, A. Thrapp, C. Photiou, C. Pitris, A. Spanias, **"**Semantic segmentation and classification of OCT colorectal polyp images," *SPIE Photonics West*, San Franscisco, January 2025.
13. T. Patel+, D. Knutson, G. Uehara, C. Jazwin, F. Marfai, J. Larson, A. Spanias, "Image Analysis-Synthesis Using the Quantum Fourier Transform, *Proc. IEEE ISCAS 2025,* London May 2025.
14. Malu+, M., Pedrielli, G., Dasarathy, G., and Spanias, A. ClassBO: Bayesian Optimization for Heterogeneous Functions. In *Learning and Intelligent Optimization: 18th International Conference, LION 18, Ischia Island, Italy, June 9–13, 2024, Revised Selected Papers* (p. 249). Springer Nature.
15. S. Naik+, N. Vaughn, A. Spanias, K. Jaskie, "Quantum classification for synthetic aperture radar, SPIE Defense and Commercial Sensing," National Harbor, Maryland, April 2024 **Student Paper Award**
16. L. Miller+, G. Uehara+, A. Spanias, Quantum Machine Learning and Spectrogram Fusion for Speech Recognition, *IEEE Asilomar Conf. On Circuits, Systems and Computers, Monterey, Oct. 2024*
17. L. Miller+, G. Uehara+, A. Spanias, "Quantum Image Fusion Methods for Remote Sensing, " *IEEE Aerospace Conference*, Big Sky, Montana, March 2024.
18. S. Naik+, G. Uehara+, L. Miller+, K. Jaskie, A. Spanias, Quantum Positive Unlabeled Learning Algorithms with Applications to Energy, *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)* 2024, London, September 2024.
19. Billingsley, G., Dietlmeier, J., Narayanaswamy+, V., Spanias, A., O'Connor, N. E. (2023, October). AN L 2-Normalized Spatial Attention Network for Accurate and Fast Classification of Brain Tumors in 2D T1-Weighted CE-MRI Images. In *2023 IEEE International Conference on Image Processing (ICIP)* (pp. 1895-1899). IEEE.
20. A. Sharma+, G. Uehara+ and A. Spanias, "Quantum Linear Prediction For System Identification And Spectral Estimation Applications," *IEEE Asilomar Conf. On Circuits, Systems and Computers, Monterey, Oct. 2023*.
21. Lavanya Shri S A, B. Patel+, M. Banavar, M.l Malu+, C. Tepedelenlioglu, A. Spanias, S. Schuckers, "Analysis of a modified SEIRS compartmental model for infectious diseases," *IEEE Asilomar Conf. On Circuits, Systems and Computers*, Monterey, Oct. 2023.
22. Jaskie, K., N. Vaughn, V. Narayanaswamy, S. Zaare, J. Marvin, and A. Spanias. "An adaptive asymmetric loss function for positive unlabeled learning." In *Automatic Target Recognition XXXIII*, vol. 12521, pp. 198-205. SPIE, June 2023. (**Best Paper Award)**
23. M. Malu+, G. Pedrielli, G. Dasarathy, and A. Spanias, "Class GP: Gaussian process modeling for heterogeneous functions" in Learning and Intelligent Optimization Conference: *17th International Conference, LION 17*, Nice, France, June 2023. Springer International Publishing
24. A. Sharma+, L. Miller+, G. Uehara, V. Narayananswami+, A. Spanias, "Signal Analysis-Synthesis Using The Quantum Fourier Transform, *IEEE ICASSP 2023*, Rhodes, June 2023 **(Top 3% rating).**
25. M. Yarter+, G. Uehara+, A. Spanias, "EDGE Cloud Voice Recognition Using Quantum Neural Networks*," IEEE MWCAS 2023*, August 2023
26. Thiagarajan, J.J., Narayanaswamy, V., Rajan+, D.,Liang, J., Chaudhri, A., Spanias, A., (2021). Designing Counterfactual Generators using Deep Model Inversion. *Neurips 2021*
27. Thopalli, Kowshik, S. Katoch+, J. Thiagarajan, P. Turaga, and A. Spanias. "Multi-Domain Ensembles for Domain Generalization." In *NeurIPS 2021 Workshop on Distribution Shifts: Connecting Methods and Applications*. 2021.
28. Shanthamallu+, U., Thiagarajan, J. J., & Spanias, A. ," Uncertainty-Matching Graph Neural Networks to Defend Against Poisoning Attacks," *Proc. of the AAAI Conf. on Artificial Intelligence.* V. 35, pp. 9524-9532, May 2021.
29. Thiagarajan, J. J., V. Narayanaswamy+, R. Anirudh, Peer-Timo Bremer, and A. Spanias. "Accurate and Robust Feature Importance Estimation under Distribution Shifts." In *Proc. of the AAAI Conference on Artificial Intelligence*, vol. 35, no. 9, pp. 7891-7898. 2021.

30. G. Uehara+, A. Spanias, W. Clark, “Quantum Information Processing Algorithms with Emphasis on Machine Learning,” *Proc. IEEE IISA 2021*, July 2021.
31. M. Malu+, G. Dasarathy, A. Spanias,” Bayesian Optimization in High-Dimensional Spaces: A Brief Survey,” *Proc. IEEE IISA 2021*, July 2021.
32. Shanthamallu+, U, J. Thiagarajan, and A. Spanias. "A Regularized Attention Mechanism for Graph Attention Networks." *2020 IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, Barcelona, May 2020.
33. J. Fan+, C. Tepedelenlioglu, A. Spanias, "Global Optimization of Graph Filters with Multiple Shift Matrices," *IEEE Asilomar Conference on Signals, Systems and Computers*, Monterrey, Nov. 2019
34. K. Jaskie+, C. Elkan, A.Spanias, A Modified Logistic Regression For Positive And Unlabeled Learning, *IEEE Asilomar Conference on Signals, Systems and Computers*, Monterrey, Nov. 2019
35. D. Mohan+, S. Katoch, S. Jayasuriya, P. Turaga, A. Spanias, Adaptive Video Subsampling For Energy-Efficient Object Detection," *IEEE Asilomar Conference on Signals, Systems and Computers*, Monterrey, Nov. 2019
36. G. Muniraju+, C. Tepedelenlioglu, Andreas Spanias,Distributed Spectral Radius Estimation in Wireless Sensor Networks, *IEEE Asilomar Conference on Signals, Systems and Computers*, Monterrey, Nov. 2019
37. V. Narayanaswamy+, J. Thiagarajan, A. Spanias, "Designing An Effective Metric Learning Pipeline for Speaker Diarization," *Proc. IEEE ICASSP 2019*, Brighton, UK, May 2019.
38. J. Fan+, C. Tepedelenlioglu, A. Spanias, "Graph Filtering With Multiple Shift Matrices," *IEEE ICASSP 2019*, Brighton, UK, May 2019.
39. R. Ramakrishna, A. Scaglione, A. Spanias, C. Tepedelenlioglu, " Distributed Bayesian Estimation With Low-Rank Data: Application To Solar Array Processing," *IEEE ICASSP 2019*, Brighton, UK, May 2019.
40. V. Narayanaswamy+, R. Ayyanar, A. Spanias, C. Tepedelenlioglu, "Connection Topology Optimization in PV Arrays using Neural Networks', *IEEE International Conference on Industrial Cyber-Physical Systems (ICPS)*, Taipei, May 2019.
41. Sunil Rao+, Andreas Spanias, Cihan Tepedelenliglu, "Solar Array Fault Detection using Neural Networks", *IEEE International Conference on Industrial Cyber-Physical Systems (ICPS),* Taipei, May 2019..
42. S. Katoch+, P. Turaga, A. Spanias, C. Tepedelenlioglu, "*'Fast Non-Linear Methods for Dynamic Texture Prediction*," Paper ID: 2613, *Proc. IEEE ICIP 2018*, Athens, Oct. 2018.
43. H. Song+ , M. Willi, J. Thiagarajan, V. Berisha, A. Spanias, “Triplet Network with Attention for Speaker Diarization, InterSpeech 2018, India, Sept. 2018.
44. H. Song+, J. Thiagarajan, D. Rajan, A Spanias, "Attend and Diagnose: Clinical Time Series Analysis using Attention Models," *Proc. AAAI Conference*, New Orleans, 2018.
45. S. Katoch+, G. Muniraju+, S. Rao, A. Spanias+, P. Turaga, C. Tepedelenlioglu, M. Banavar, D. Srinivasan, "Shading Prediction, Fault Detection, and Consensus Estimation for Solar Array Control," *1st IEEE International Conference on Industrial Cyber-Physical Systems (ICPS 2018*), Saint Petersburg, May 2018.
46. H. Song+, J. J. Thiagarajan, P. Sattigeri, K. Ramamurthy, A. Spanias, 'A Deep Learning Approach To Multiple Kernel Fusion," *Proc. IEEE ICASSP 2017*, New Orleans, March 2017.
47. G. Muniraju+ ,S. Zhang+ ,C. Tepedelenlioglu,M. Banavar ,A. Spanias, C. Vargas-Rosales, R. Villalpando, , "Location Based Distributed Spectral Clustering for Wireless Sensor Networks,” *IEEE SSPD 2017,* London, Dec. 2017
48. J. Thiagarajan+, Karthikeyan Ramamurthy+, Berkay Kanberoglu, David Frakes, Kevin Bennett, Andreas Spanias, “Measuring glomerular number from kidney MRI images*,” Part of SPIE Medical Imaging*, March 2016.
49. S. Zhang+, C. Tepedelenlioglu, J. Lee, H. Braun and A. Spanias, "Cramer-Rao Bounds for Distributed System Size Estimation Using Consensus Algorithms," IEEE/IET Sensors and Signal Processing for Defence Conference (SSPD 2016 – sponsored by UK Ministry of Defence), pp. 1-5, Edinburgh Sept. 2016.
50. J. Lee+, M. Stanley, A. Spanias, C. Tepedelenlioglu, "Integrating Machine Learning in Embedded Sensor Systems for Internet-of-Things Applications," *Proc. 2016 IEEE International Symposium on Signal Processing and Information Systems (ISSPIT 2016)*, Limassol, Cyprus, Dec. 2016.
51. H. Braun+, P. Turaga, A. Spanias, G. Tepedelenlioglu, 'Direct Classification from Compressively Sensed Images via Deep Boltzmann Machine," *IEEE Asilomar Conference*, Monterey, Nov. 2016.
52. S. Zhang+, J. Lee+, C. Tepedelenlioglu and A. Spanias, "Distributed Estimation of the Degree Distribution in Wireless Sensor Networks," *IEEE Global Communications Conference*, Dec. 2016.
53. U. Shanthamallu+, A. Spanias, C. Tepedelenlioglu, M. Stanley, "A Brief Survey of Machine Learning Methods and their Sensor and IoT Applications," *Proceedings 8th International Conference on Information, Intelligence, Systems and Applications (IEEE IISA 2017)*, Larnaca, August 2017.
54. S. Zhang,+ C. Tepedelenlioglu, M.K. Banavar and A. Spanias, “Distributed Node Counting in Wireless Sensor Networks”, *49th Annual Asilomar Conference on Signals, Systems, and Computers*, 2015.
55. S. Zhang+, C. Tepedelenlioglu, M.K. Banavar and A. Spanias, “Max-consensus using Soft Maximum,” *47th Annual Asilomar Conference on Signals, Systems, and Computers*, 2013.

56. H. Song+, J. Thiagarajan, Ramamurthy, K.N. ; Spanias, A, " Improving Delay Embedding Characterization using Statistical Regularity Features for Activity Recognition," *IEEE Asilomar Conference*, Nov. 2016.
57. H. Song, J. Thiagarajan, Ramamurthy, K.N. Spanias, A., "Auto-Context Modeling Using Multiple Kernel Learning," *2016 IEEE International Conference on Image Processing (ICIP*), Phoenix, Sept. 2016.
58. A. Wisler+, V. Berisha, K. Wei, K Ramamurthy, A. Spanias," Empirically-Estimable Multi-Class Classification Bounds ", MLSP-P5.8, *Proc. IEEE ICASSP 2016*, Shanghai China, March 2016.
59. H. Song, J. Thiagarajan,,K Ramamurthy, A. Spanias, P. Turaga, "Iterative Kernel Fusion For Image Classification", MLSP-L2.4, *IEEE ICASSP 2016,* Shanghai China, March 2016.
60. J. Thiagarajan+, Ramamurthy+, K.N. ; Sattigeri+, P. ; Bremer, P.T. ; Spanias, A. , Automatic image annotation using inverse maps from semantic embeddings," *2014 IEEE ICIP*, pp. 3107- 3111, 2014.
61. Berisha, V. ; Liss, J. ; Sandoval, S. ; Utianski, R. ; Spanias, A., "Modeling pathological speech perception from data with similarity labels,"*2014 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* DOI: 10.1109/ICASSP.2014.6853730, pp. 915- 919, 2014 .
62. H. Braun+, S. Peshin+, A. Spanias, C. Tepedelenlioglu, M. Banavar, G. Kalyanasundaram, and D. Srinivansan, "Irradiance estimation for a smart PV array," *IEEE Energy Conversion Conference and Expo, Montreal*, Oct. 2015.
63. A. Wisler+, V. Berisha, J. Liss, and A/ Spanias, "Domain invariant speech features using a new divergence measure," *IEEE in Spoken Language Technology Workshop (SLT),* pp. 77–82, 2014.
64. S. Miller+, X. Zhang+, A. Spanias, "A New Asymmetric Correlation Kernel for GNSS Multipath Mitigations*," Proc. Sensors and Signal Processing for Defense (SSPD 2015),* Edinburgh, Scotland, Sept. 2015.
65. G. Kalyanasundaram+, M. Banavar+, A. Spanias, "Audio modeling and loudness estimation with IJDSP mobile simulations," *2015 IEEE ICASSP,* pp. 5550- 5554, Brisbane, April 2015.
66. A. Wisler+, V. Berisha, K. Ramamurthy, A. Spanias, J. Liss," Removing data with noisy responses in regression analysis, " Proc. 2015 *IEEE ICASSP*, pp. 2066 - 2070, Brisbane, April 2015.
67. Z. Antoniou, A. Panayides, M. Pattichis, S. Stavrou, E. Kyriacou, A. Spanias, A. G. Constantinides, C.S. Pattichis, Adaptive Emergency Scenery Video Communications using HEVC for Responsive Decision Support in Disaster Incidents, *Proc. of 37th Annual Conference of the IEEE Engineering in Medicine and Biology Society (EMBC*), pp. 173-176, Milano, Aug. 25 – 29, 2015.
68. Sattigeri+, P., Thiagarajan+, J. J., Shah, M., Ramamurthy+, K. N. & Spanias, A. "A scalable feature learning and tag prediction framework for natural environment sounds," 2015 Conference Record - *Asilomar Conference on Signals, Systems and Computers. IEEE Computer Society*, p. 1779-1783, Nov 2015.
69. A. Spanias, "An introductory signal processing course offered across the curriculum, " *IEEE Signal Processing and Signal Processing Education Workshop (SP/SPE),* Utah, August 2015
70. Lee, J.+, Tepedelenlioglu, C., Banavar, M. K. & Spanias, "Nonlinear diffusion adaptation with bounded transmission over distributed networks," *IEEE ICCC*. pp. 6707-6711, London, June 2015
71. Visar Berisha; Julie Liss; Steven Sandoval; Rene Utianski; Andreas Spanias , Modeling pathological speech perception from data with similarity labels, ICASSP, *IEEE International Conference on Acoustics, Speech and Signal Processing* - Proceedings. pp. 915-919, 2014.
72. R. Santucci+, M.K. Banavar+, S. Zhang+, A. Spanias, C. Tepedelenlioglu, "OFDM-based Distributed Estimation for Rich Scattering Environments," IEEE Sensors and Signal Processing for Defence Conference (SSPD 2014 – sponsored by UK Ministry of Defence), pp. 1-5, Edinburgh, Sep. 2014.
73. Shah, M+. ; Chakrabarti, C. ; Spanias, A.,"A multi-modal approach to emotion recognition using undirected topic models." *2014 IEEE ISCAS,* pp. 754-757, 2014.
74. Braun, H+. ; Turaga, P. ; Spanias, A. , Direct tracking from compressive imagers: A proof of concept," *(ICASSP 2014* , 2014 , pp. 8139- 8142, Florence, 2014.
75. Zhang, Xue+ ; Tepedelenlioglu, Cihan ; Banavar, Mahesh ; Spanias, Andreas, "CRLB for the localization error in the presence of fading. *IEEE ICASSP 2013,* 5150-5154, Vancouver, May 2013.
76. Braun+, H. ; Turaga, P. ; Tepedelenlioglu, C. ; Spanias, A., "Optical flow for compressive sensing video reconstruction." *Proc. IEEE ICASSP 2013,* 2267-2271, Vancouver, May 2013.
77. Krishnamoorthi+, Harish ; Spanias, Andreas, "Sinusoidal component selection based on partial loudness criteria,"*IEEE ICASSP 2013*, pp. 575-579, Vancouver, May 2013.
78. Shah, Mohit+ ; Miao, Lifeng ; Chakrabarti, Chaitali ; Spanias, Andreas, "A speech emotion recognition framework based on latent Dirichlet allocation: Algorithm and FPGA implementation," *Proc. IEEE Acoustics, Speech and Signal Processing (ICASSP 2013)*, 2553- 2557, Vancouver, May 2013.
79. Santucci+, R. ; Banavar, M.K. ; Spanias, A. ; Tepedelenlioglu, C., "Design of limiting amplifier models for nonlinear amplify-and-forward distributed estimation," *2013 18th Int. Conference o nDSP*, Thira, July 2013.
80. Berisha, Visar ; Sandoval, Steven ; Utianski, Rene ; Liss, Julie ; Spanias, Andreas, " Selecting disorder-specific features for speech pathology fingerprinting,"Proc. *IEEE ICASSP 2013,* 7562- 7566, Vancouver, May 2013.

81. Natesan Karthikeyan+ ; Thiagarajan+, Jayaraman J. ; Spanias, Andreas ; Sattigeri, Prasanna, "Boosted dictionaries for image restoration based on sparse representations,"*Proc. IEEE Acoustics, Speech and Signal Processing (ICASSP 2013*), 1583- 1587, Vancouver, May 2013.
82. Braun+, H.; Buddha+, S.T.; Krishnan+, V.; Spanias, A.; Tepedelenlioglu, C.; Yeider, T.; Takehara, T., "Fault detection in photovoltaic arrays*," 2012 IEEE ICASSP,* pp. 1681- 1684, March 2012,
83. J. J. Thiagarajan, K. N. Ramamurthy, P. Sattigeri and A. Spanias, "Supervised local sparse coding of sub-image features for image retrieval," *IEEE ICIP 2012*, Orlando, Sept. 2012.
84. Buddha+, S.; Braun+, H.; Krishnan+, V.; Tepedelenlioglu, C.; Spanias, A.; Yeider, T.; Takehara, T. "Signal processing for photovoltaic applications," *2012 IEEE International Conference on Emerging Signal Processing Applications (ESPA*), pp. 115- 118, Las Vegas, Jan. 2012.
85. A.Fink+ and A. Spanias, "Constrained estimation of percussive sound excitations," *2011 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA),* New Paltz, NY, 2011, pp. 16-19.
86. Fink and A. Spanias, "Estimation of signal subspace-constrained inputs to linear systems," 2011 Conf. Rec. of the 45th *Asilomar Conf. on Signals, Systems, and Computers*, Pacific Grove, CA, 2011
87. Banavar+, M.K.; Tepedelenlioglu, C.; Spanias, A, Distributed SNR estimation using constant modulus signaling over Gaussian multiple-access channels,"*IEEE DSP Workshop (DSP/SPE*), 2011 , Page(s): 24 – 29, 2011.
88. Fink+, A.; Spanias, A.; "Constrained estimation of percussive sound excitations," "*Applications of Signal Processing to Audio and Acoustics (WASPAA), 2011 IEEE WASPAA.2011*.6082338, 2011 , Page(s): 201 - 204
89. J. J. Thiagarajan+ and A. Spanias, "Learning dictionaries for local sparse coding in image classification," *IEEE Asilomar Conf.* , Nov. 2011 (Nominated and Finalist for the Best Student Paper award).
90. J. J. Thiagarajan+, K. N. Ramamurthy+, and A. Spanias, "Multilevel dictionary learning for sparse representation of images," Page(s): 271 – 276, in Proc. of *IEEE DSP Workshop*, Sedona, 2011.
91. K. N. Ramamurthy+ and A. Spanias, "Optimized Measurements for Kernel Compressive Sensing," in Proc. Asilomar SSC, Monterey, Nov. 2011.
92. K. N. Ramamurthy+, J. J. Thiagarajan+ and A. Spanias, "Improved sparse coding using manifold projections," *Proc. of IEEE International Conference on Image Processing,* Belgium, Page(s): 1237 – 1240, Oct. 2011.
93. M.K. Banavar+, C. Tepedelenlioglu, A. Spanias, "Distributed SNR estimation using constant modulus signaling over Gaussian multiple-access channels*," DSP Workshop (DSP/SPE), 2011 IEEE* , pp.24-29, 4-7 Jan. 2011.
94. Willerton+, M.; Banavar, M.; Zhang, X.; Manikas, A.; Tepedelenlioglu, C.; Spanias, A.; Thornton, T.; Yeatman, E.; Constantinides, A., "Sequential wireless sensor network discovery using wide aperture array signal processing." *2012 20th EUSIPCO*, pp: 2278- 2282, Romania 2012.
95. Ravichandran, L., Papandreou-Suppappola, A., Spanias, A., Lacroix, Z., and Legendre, C. (2010). Time-frequency based biological sequence querying. *IEEE ICASSP, D*allas, March 2010.
96. Banavar+, M.K., Smith, A.D., Tepedelenlioglu, C., and Spanias, A. (2010). "Distributed Detection over Fading MACs with Multiple Antennas at the Fusion Center." *IEEE ICASSP 2010*, Dallas, March 2010.
97. Krishnamoorthi+, H., Spanias, A., Berisha, V., Kwon+, H., Thornburg, H. (2010). "An auditory-domain based speech enhancement algorithm." *IEEE International Conference on Acoustics, Speech, and Signal Processing (IEEE ICASSP 2010*), Dallas, March 2010.
98. T. Mathew, P. Joshi, S. Prasad, M. Goryll, A. Spanias, T. J. Thornton, "Silicon-Based Pore Systems for Emerging Biosensor Applications", Proceedings of the 2009 ASME International Mechanical Engineering Congress & Exposition, Lake Buena Vista, Florida, USA, November 13-19, 2009.
99. K. Ramamurthy, J. Thiagarajan, P. Sattigeri, B. Konnanath, A. Spanias, T. Thornton, S. Prasad, M. Goryll, S.Phillips and S. Goodnick, "Transform Domain Features for Ion-Channel Signal Classification using Support Vector Machines", 9th Int. Conf. on Information Technology and Applications in Biomedicine, (ITAB-09'), Cyprus, Nov. 2009.
100. P. Joshi, T. Mathew, S. Prasad, M. Goryll, A. Spanias, T. Thornton, "Electromigration of Charged Polystyrene Beads Through Silicon Nanopores Filled With Low Ionic Strength Solutions," *2009 ASME IMECE*, Florida, 2009.
101. T. Mathew, P. Joshi, S. Prasad, M. Goryll, A. Spanias, T. J. Thornton, "Silicon-Based Pore Systems for Emerging Biosensor Applications", *ANCRiSST 2009, The Fifth International Workshop on Advanced Smart Materials and Smart Structures Technology,* Boston, July 29-August 1, 2009.
102. B. Konnanath, P. Sattigeri, T. Mathew, A. Spanias, S. Prasad, M. Goryll, T. Thornton and P. Knee,"Acquiring and Classifying Signals from Nanopores and Ion-Channels ", *IEEE ICANN 2009*, Limassol, September 2009.

Invited Contributions in Books - Book Chapters (several chapters – listing 2)

- Andreas Spanias, Chapter 3: Speech Coding Standards, pp. 25-44, **Invited.** Academic Press, Ed: G. Gibson, ISBN 2000 0-12- 282160-2.
- Sabesan, S., K. Narayanan, A. Prasad, L.D. Iasemidis, A. Spanias and K. Tsakalis, Information flow in coupled nonlinear systems: Application to the epileptic human brain", In: Data Mining in Biomedicine, P. Pardalos, Ed., Kluwer Academic Publishers 2006.

Invited Seminars, Tutorials and Keynote Presentations (50+ invited – a few listed below)

- Tutorial on Transition from Academic Research to Patents, IEEE IISA 2026, July 2026. (audience 25)
- Research in Quantum Machine Learning, CWSPI 2026 at CMMI, Larnaca, July 2026 (audience 28)
- Establishing Application-oriented patents from Academic Research, ASU, Tempe, June 2026 (audience 20)
- Signal Processing for PV Monitoring, Boudapest University of Technology and Economics, April 2026. (audience 20)
- Quantum Machine Learning for Cancer Detection, Amazon, Seattle, Nov. 2025. (audience 10)
- Classical and Quantum Signal Processing and Machine Learning Research at the SenSIP Center Technical University of Vienna (TU Wien), October 2025. (audience 25)
- Machine Learning for Voice and Image Processing - Part of Fulbright Research Experience, University of Belgrade, Belgrade, Serbia, May 2, 2025. (audience 10)
- Transform Coders for Speech and Audio Signals - Classical and Quantum Realizations, IEEE Signal Processing Chapter Meeting, Skopje, April 28, 2025. (audience 45)
- A Survey of Sixty plus Years of Speech Coding Research and a Briefing on Quantum Computing Simulations of Speech Processing Algorithms, Aristotle University of Thessaloniki, March 28, 2025. (audience 40)
- Classical and Quantum Realizations of Sinusoidal Signal Analysis-Synthesis Models - Seminar is Part of the Fulbright Research Experience, RIT Kosovo, Prishtina, March 20, 2025 (audience 20)
- Quantum Machine Learning in Signal, Image and Energy Related Projects at ASU**,** SS. Cyril and Methodious University, Skopje, North Macedonia, January 27, 2025 (audience 60).
- Quantum Machine Learning for Speech Analysis-Synthesis, Microsoft Research, April 10, 2024. (audience 10)
- Quantum Machine Learning Simulations for Signal Processing Applications, Amazon Research, April 12, 2024
- Research and Education Efforts in AI and Quantum Computing, University of Porto, March 22, 2024 (audience 30.)
- Quantum Machine Learning for Speech Processing Applications, University of Lisbon, March 20, 2024 (audience 15)
- Quantum Machine Learning Tutorial at IEEE MWSCAS, Tempe, AZ Aug. 2023. (audience 20)
- Quantum Machine Learning Seminar part of the NEI QTEL Tutorial, June 2023 (online).
- Smart Object Detection – An I/UCRC project, (with S. Jayasuriya), Qualcomm, Feb. 2020. (audience 40)
- Image Processing at the SenSIP I/UCRC, Qualcomm, April 2019 (audience 30) (audience 14)
- Sensors and Machine Learning for PV Monitoring, TU DELFT, Delft, March 2019.
- The SenSIP I/UCRC, ON Semiconductor, January 2019. (audience 20)
- "Wireless & signal processing-based technology Innovation: What does it take to bring it to the marketplace?," Panel with presentation, IEEE SPAWC 2018, Kalamata, June 2018. (audience 70)
- Solar Energy as an IoT Application, IEEE IISA 2017, Keynote Speech, Aug. 2017 (audience 50)
- Sensors and Machine Learning Primer, MEMS & Sensors Collaborative SensMach Event, Nov. 2016.
- The SenSIP program on speech processing, University of Chicago, April 2016 (Audience 25)
- SenSIP Activities in Machine Learning Algorithms, Imperial College, Nov 2015 (audience 30)
- Modern Speech Processing Algorithms, Cirrus Logic, June 2013. (audience 20)
- Research on Loudness Estimation, Qualcomm, Feb. 2013 (audience 40)
- Plenary Session at IEEE FIE 2012, Premier Award Session, Seattle, Oct 2012 (audience 400).
- A. Spanias, Signal Processing for Diesel Exhaust Monitoring, Univ. of California- Riverside, Nov.2009 (audience 40).
- SenSIP patent on audio bandwidth extension, Microsoft Research, Redmond, December 18, 2007 (audience 20)
- SenSIP research on Defense Applications of Audio Sensors, General Dynamics, November 20, 2007 (audience 30)
- Acoustic Monitoring, Stanford CCRMA, November 6, 2007 (audience 10)
- Adaptive Noise Cancellation, Acoustic Technologies, October 2007 (audience 12)
- SenSIP research in Audio Processing, MIT Lincoln Labs, Cambridge, September 2007 (audience 20)
- "The AME program at ASU," Invited Seminar, Rutgers University CAIP center, March 2007 (audience 20).
- "Smart Antennas," University of ULM, IEEE Distinguished Lecturer Program, ULM, Feb. 2005 (audience 40).

RESEARCH GRANTS AND CONTRACTS

External Research Grants and Contracts (>$13M)

1. PI: A. Spanias, Co-PI J. Larson, Quantum Machine Learning REU, $357k. NSF CISE, 2024-2026
2. PI: A. Spanias, Co-PI W. Barnard, Quantum Signal Processing Tools, $300k. NSF IUSE, 2023-2027
3. PI: A. Spanias, Co-PI C. Tepedelenlioglu, R. Ayyanar, S. Goodnick, J. Kitchen, Q. Lei, NSF Instrumentation on Solar monitoring, July 2020-Sept. 2026. $499k.

4. PI: Spanias, Co-PI C. Tepedelenlioglu, NSF RAPID on Covid-19 Hotspot Estimation. NSF, May 2020-23, $100k.
5. PI: A. Spanias, Co-PI P. Turaga, C. Tepedelenlioglu, R. Ayyanar, NSF CPS – Solar Array Monitoring using Machine Learning, $600k, Sep. 2016-Sep. 2021.
6. PI: A. Spanias Co-PI J. Blain-Christen, NSF CNS RET Site: Sensor, Signal and Information Processing Algorithms and Software, $557k, Feb. 2020-Sept. 2026.
7. PI: A. Spanias, Co-PI W. Barnard, NSF OISE – IRES Track I: Sensors and Machine Learning for Solar Power Monitoring and Control, Award 1854273 Funded by NSF Award $300k, April 2019-April 2022.
8. PI: A. Spanias, Co-PI J. Blain-Christen, NSF CNS – A SenSIP REU Site on Devices and Algorithms, $330k, Jan. 2017-Jan. 2021.
9. PI: A. Spanias, Co-PI Turaga, NSF IUSE Program on Sensors, $480k, Sep. 2015-July 2019.
10. PI: A. Spanias, NSF I/UCRC SenSIP Center and Industry Consortium Phase 2, $336k, Sep. 2015-July 2020.
11. PI: C. Tepedelenioglu , Co-PI A. Spanias, NSF 1307982,, Arizona State University Distributed and Robust Estimation for Cyberphysical Systems, 07/17/2013-7/16/2016, $372,629.
12. PI: A. Spanias, Co-PI C. Tepedelenioglu, NSF 1308052 Arizona State University GOALI: Intelligent Networked Solar Panel Array, 09/09/2013-9/8/2016, $378,962.
13. PI: A. Spanias, Co-PI C. Tepedelenioglu, NSF Fundamental Research on Sensor Fusion Algorithms, $198k (24MOS), July 2012 - July1014.
14. PI: A. Spanias, NSF I/UCRC SenSIP Center and Industry Consortium, $336k, July 2010-July 2015.
15. PI: Andreas Spanias, Co-PI R. Ayanar, NSF Award 816701, Java-DSP Software Development for Multidisciplinary Research and Education - Phase 3, $1.2 M, Start August 2008-End August 2015.
16. PI: Andreas Spanias, Co-PI S. Goodnick, NSF Award 0730810, EXP-SA: DSP Algorithms for Silicon Ion-Channel Sensors, $400k (36 months), Start August 2007-End August 2010.
17. Co-PI A. Spanias,, NSF Award CCF-0830799, NSF Theoretical Foundations, "Biomedical Innovations Using Implementation-Aware Agile Sensing and Signal Processing," PI: Antonia Papandreou-Suppappola, Co-PI: Chaitali Chakrabarti., $375k (36 months), Start August 2008-End August 2011.
18. PI at ASU; A. Spanias,, NSF Collaborative Grant (JHU/Purdue/ASU)): J-DSP in Astronomical Time-Scale Measurements "An Astronomical-Calibrated Time Scale for the Mesozoic Era," $500k (ASU portion 184k - 36 months), NSF Award 0719714, Start October 2007-End October 2010.
19. Co-PI A. Spanias,, NIH- Collaborative Grant UC-R and ASU by NIH sponsored for $1M, May 2007 (Co-PIs: Mulchandani, Wang, Bakkaloglu, Spanias) "Wearable Nanosensor Array for Real-Time Monitoring of Diesel and Gasoline Exhaust Exposure," Start September 2007-End August 2010.
20. Co-PI A. Spanias, PI: T. Rikakis, Co-PIs: J. He, H. Sundaram, W. Sauvigne, NSF IGERT: "An Arts, Sciences and Engineering Research and Education Initiative for Experiential Media," $3M, 0504647, Sept 2005-Sept 2008.
21. PI: Andreas Spanias, Co-PIs: J. Zhang, A. Papandreou, C. Tepedelenlioglu, **NSF**, Collaborative proposal on J-DSP development, ASU leady with URI, UTD, UWB and UCF as subs, $425k (ASU share $315k), April 2005-April 2009
22. PI: Andreas Spanias, CO-PIs T. Duman, A. Papandreou, C. Tepedelenlioglu, "A CRCD in Signal Processing for Communications," **NSF CISE**, DWJ0064, $ 300,000, Sept. 2004-August 2006
23. PI: A. Spanias, Analysis of the MXP Architecture, GemTech Systems, $12,000, Jan 2004-June 2005
24. PI: Andreas Spanias, CO-PIs T. Duman, A. Papandreou, K. Tsakalis, L. Karam, "Java DSP - Extensions to Communications Advanced DSP, Controls, Image, **NSF**, JRA-0001, $ 424,770, Jan 2001-Jan 2004
25. CO-PI; A.S. Spanias, PI: C. Balanis and 4 other CO-PIs, **NSF**, "Smart Antennas," $458,100, Sept. 2000 - Aug. 2002.
26. PI; A.S. Spanias, **Intel Corp.**, "Distributed Voice Recognition System for the PC," $58,100, Sept. 1996 - Jan. 1998.
27. PI: A.S. Spanias and CO-PI: J. Sadowsky, Analysis and Implementation of CDMA Mobile Communications, Amount: $241,457.00, **Intel Corp.,** DWT 0011, Aug. 1996-Aug. 1997.
28. PI: A.S. Spanias, Development of Universal and Interoperable Speech and Audio Compression Algorithms for Multimedia and Teleconferencing Applications, Sponsor**: Intel Corp**., Amount: $177,354, Feb. 1995-Jan. 1998.

29. PI: A.S. Spanias and CO-PI: J. Sadowsky, Implementation and Integration of the Speech Codec, Channel Coder/Decoder, and Signaling Protocol on Prototype DSP Chips**, Intel Corp.**, Amount: $243,500.00, DWT 4630, May. 1995-Aug. 1996.
30. PI: Chaitali Chakrabarti, CO-PI: A.S. Spanias, "Special Purpose Architectures for Speech Coding Algorithms-Phase 2," Sponsor: Motorola Inc, $15,000, Aug 16, 1995- Aug 14, 1996.
31. PI: A.S. Spanias, Analysis and Implementation of Modem Algorithms on Intel DSP Architectures, Sponsor: **Intel Corp.**, Amount: $56,939.00, Aug. 1994-Feb. 1995.
32. PI: A.S. Spanias, Speech Enhancement Algorithms for Mobile Communications, Sponsor: **Intel Corp**., Amount: $37,940.00, DWT 4460, Aug. 1994-Aug. 1995.
33. PI: A.S. Spanias, CO-PI: C. Chakrabarti, Speech Coding Algorithms for Multimedia Applications, Sponsor: **Intel Corporation**, Amount: $54,728, Sept. 1993-Aug. 1994.
34. PI: Chaitali Chakrabarti, CO-PI: A.S. Spanias, "Special Purpose Architectures for Speech Coding Algorithms," Sponsor: Motorola Inc, $15,745.00., May 16, 1994- May 14, 1995.
35. PI: A.S. Spanias, Image Processing Algorithms for Teleconferencing and Multimedia Applications, Sponsor: **Motorola Inc**., Amount: $45,000, Feb. 1 1994-Jan. 31 1995.
36. PI: A.S. Spanias, Development of Speech Encoding and Recognition Algorithms for the Phoenix Architecture: Phase 2, Sponsor: **Intel Corp**., Amount: $200,229.00, Aug. 1993-Aug. 1994.
37. PI: A.S. Spanias, Speech Enhancement Algorithms for Mobile Communications, Sponsor: **Intel Corp**., Amount: $36,130.00, Aug. 1993-Aug. 1994.
38. PI: A.S. Spanias, Development of Speech Encoding, Recognition, and Data Encryption Algorithms for the Phoenix Architecture, Sponsor: **Intel Corp**., Amount: $192,781.00, CRP 92373, DWT 4473, Aug. 1992-Dec. 1993.
39. PI: A.S. Spanias, CO-PI: Jennie Si, Performance Evaluation of Voice Recognition Algorithms, Sponsor: **Motorola Inc**, $19,845.00. February 1993-July 1993.
40. PI: A.S. Spanias, Enhancement of Speech Using the Pseudocepstrum, Sponsor: **Motorola GEG,** $39,955.00., CRP 92265, DWT 4460, February 1992-February 1993.
41. PI: A.S. Spanias, Development and Evaluation of Fixed-Point Full and Half-Rate GSM Coders, Sponsor**: Intel Corp**., Amount: $233,463.00, CRP 92079, DWT 4432, Date: September 1991-December 1992
42. PI: A.S. Spanias, "Active Noise Cancellation in Ducts, "Sponsor: Active Noise and Vibration Technologies, Amount: $27,682.00, CRP 92039, DWT 8504, Date: August 1991-December 1992
43. PI: A.S. Spanias, Fixed Point Implementation of the VSELP algorithm, Sponsor: Intel Corp., Amount: $55,984.00, CRP 91289, DWT 4423, Date: May 1991-June 1992
44. PI: A.S. Spanias, "Transform Coding for Seismic Data Compression," Sponsor: Sandia National Laboratories (SNL), CRP 90009, $19,982.00, DWJ 6150, November 1989-October 1990.
45. PI: A.S. Spanias (and overall project director) and 13 other CO-PIs from four different colleges (CEAS, CLAS, COE, and CEE), "Multidisciplinary Research on Multimedia Technologies for Distributed Learning Using the Intel PC and the Internet, $67,000, **Intel Corporation**.
46. PI: A. Spanias and 15 other CO-PIs, "Multidisciplinary Research on the Next Generation Multimedia Technologies for Interactive Distributed Learning," **State of Arizona, ASU VPR Multidisciplinary Initiative Committee**, Pre-proposal already approved, $ 150,000 for three years.

SenSIP Consortium (NSF I/UCRC) Industry Memberships & Consortium Projects – Industry Funded more than $2.5M

Andreas Spanias is the founder and director of the SenSIP Consortium (I/UCRC site 2010-2022). Currently ASU-based Industry Consortium directed by A. Spanias. Several industry projects listed below established by A. Spanias as of December 2025.

- American Express, $78k, 2025-27 (Quantum Machine Learning for Fraud Detection)
- RTX, $78k, 2025-2027 (UAV localization)
- PSG, $117k, 2023-2026, (Large language models for SAR applications)
- NXP, Sensors and machine learning, $280k, June 2016-2019, 2020-2026.
- Qualcomm, $105k, 2019-21, 2024-25 (Computational Cameras)

- Alphacore, $183k, 2018-2020, 2022-2026 (Infrared sensing).
- Poundra, $280k, 2017-21, 2022-27. (Photovoltaic Fault Detection)
- Samsung, $39k, 2022-23 (Machine Learning for Communications)
- CI Labs, $70k, 2022-24 (Quantum Machine Learning)
- On Semi, $70k, 2020-22 (Machine Learning for Electronics)
- Resonea, $10k, 2020-21 (Covid 19 detection from cough patterns)
- Lightsense Technology, $10k, 2018 (chemical sensors).
- Prime Solutions Group, (3 years), $105k, 2017-20 (SAR).
- Aperio DSP, (2 years), $10k, 2017-1 (DSP).
- Sprint, Sensors and Mobile devices, 2011-2015. (Total $260k) (cell phone localization)
- Raytheon, Radar and Vision projects, $140k, June 2016-2019.
- Freescale, machine Learning, $50k, April 2014-2016
- Applied Core Technologies (Paceco/Mitsui), $60k, PV monitoring, Nov. 2013-Nov2015
- Intel Corporation, $150k, Nov. 2013-Nov 2018.
- ViaSOL Energy, $60k, PV testbed, June 2013-June 2015
- Interactive Flow Technologies, $10k, May 2013-May 2014.
- Raytheon Missile Systems, $240k, Target tracking, December 2007-December 2015.
- Intel Corporation, $50k, IoT Tools, June 2009-June 2011
- Lockheed, $25k, Radar systems, December 2008-December 2012
- National Instruments, $50k, LabView Software development, December 2007-December 2009.
- Acoustic Technologies, $25k,Echo Cancellers, November 2007-November 2009

Student Theses and Dissertations Supervised

Ph.D. Dissertation Supervision (44 Completed / advising 5 currently)

1. Glen Uehara, Quantum Machine Learning for Classification: Harnessing Entanglement for Photovoltaic Fault Detection, Dec. 2025, Chair (Winner of Palais Doctoral Dissertation Award)
2. Vivek Sivaraman, Methodologies to Improve Fidelity and Reliability of Deep Learning Models for Real-World Deployment, Chair, January 2023. Chair
3. Mohit Malu Structure-Guided Bayesian Optimization for Heterogeneous and High-dimensional Functions**,** May 2026 (Co-Chair G. Dasarathy)
4. Odrika Iqbal, Software-Defined Imaging for Embedded Computer Vision: Adaptive Subsampling and Event-based Visual Navigation, 2024 (Co-Chair S. Jayasuriya).
5. Uday Shanthamallu, Representation Learning for Graph Structured Data using Deep Neural Networks, Chair, 2022.
6. Kristen Jaskie, Positive Unlabeled Learning Optimization and Evaluation, December 2021, Chair
7. Sam Katoch, Effective Prior Selection and Knowledge Transfer for Deep Learning Applications, Co-Chair, P. Turaga, 2024.
8. Jie Fan, Graph Based Semi-Supervised Classification and Manifold Learning, Co-Chair C. Tepedelenlioglu, Feb. 2022.
9. Sunil Rao, Fault Detection and Classification in Photovoltaic Arrays using Machine Learning, 2021, Co-Chair.
10. Gowtham Muniraju, Distributed Consensus Algorithms for Wireless Sensor Networks, 2021, Co-Chair (C. Tepedelenlioglu)
11. Huan Song, Data Driven Representation in Multimodal Feature Fusion, 2018, Chair
12. Juan Andrade Rodas, No-Reference Image Sharpness Assessment Based On Perceptually-Weighted Image Gradients, (Co-Chair P. Turaga)
13. Jongming Lee, Consensus-based Distributed Quantile Estimation in Sensor Networks, (Co-Chair with C. Tepedelenlioglu).
14. Sai Zhang, Estimation of Size and Structure of Sensor Network, (Co-Chair C. Tepedelenlioglu).
15. Henry Braun, Image Reconstruction, Classification, and Tracking for Compressed Sensing Imaging, Dec. 2016 (Co-Chair P. Turaga).
16. Xue Zhang, Wireless Sensor Localization, May 2016 (Co-Chair C. Tepedelenlioglu).

17. Alan Wisler, Algorithm-Agnostic Performance Estimators for Machine Learning, 22016 (Co-Chair V. Berisha)
18. Mohit. Shah, Context recognition methods using audio signals for human-machine interaction, May, 2015 (Co-Chair C. Chakrabarti).
19. Prasanna Sattigeri, Exploring latent structure in data: algorithms and implementations, Dec, 2014. (Chair)
20. Brandon M. Mechtley, Techniques for Soundscape Retrieval and Synthesis, November 2013. (Chair)
21. Steven Miller, Multipath Mitigating Correlation Kernels for Direct Sequence Spread Spectrum Receivers, 2013 (Chair)
22. Robert Santucci+, Energy-Efficient Distributed Estimation by Utilizing a Nonlinear Amplifier, November 2013 (Chair)
23. Alex M. Fink+, Re-Sonification of Objects, Events, and Environments, March 2013. (Chair)
24. Jayaraman Thiagarajan+, Sparse Methods in Image Understanding and Computer Vision, Friday, March 2013. (Chair)
25. Karthikeyan Natesan Ramamurthy+, New Directions in Sparse Models for Image Analysis, February 2013. (Chair)
26. Harish Krishnamoorthi, Incorporating Auditory Models in Speech/Audio Applications, Dept. EE., May 2011.(Chair)
27. Lakshminarayan Ravichandran, Genomic Signal Processing," (co-chair A. Papandreou-Suppappola)
28. Distributed Inference over Multiple-Access Channels with Wireless Sensor Networks, Mahesh Banavar, (co-advisor C. Tepededlenlioglu) ASU, December 2010, Post Doc up to 2023.
29. Homin Kwon, "Acoustic Scene Analysis," Ph.D., Dept. Electr. Eng., ASU, December 2009. (Chair)
30. Gordon Wichern "Audio Content Search,", Ph.D., IGERT Fellow (co-chair with H. Thornburg)
31. Visar Berisha, "Bandwidth Extension Algorithms," Ph.D., Dept. Electr. Eng., ASU, November 2007 (Chair)
32. Jeff Foutz, "DSP Algorithms for Smart Antennas," Ph.D., Dept. Electr. Eng., ASU, March 2007 (with GE). (Chair)
33. V. Atti, "Perceptual Pole Estimation for Linear Prediction," Dept. Electr. Eng., ASU, August 2006 (Chair)
34. G. Maalouli, "Channel Equalization with Doppler Rate Measurements", Dept. Electr. Eng., May 2006 (Chair)
35. K. Ahmed,"PEP-Based Optimal Training for MIMO Systems in Wireless Channels," Dept. Electr. Eng., ASU, Aug. 2005 (co-chaired with C. Tepedelenlioglu)
36. B. Badke "Adaptive Algorithms for GPS systems," Dept. Electr. Eng., Dec. 2002. (Chair)
37. Ted Painter, "Perceptual Coding of Digital Audio," Dept. Electr. Eng., ASU, August 2000 (Chair)
38. Khosro Daroudi, "Sinusoidal Modeling of Wideband Signals," Dept. Electr. Eng., ASU, December 1999. (Chair)
39. Gopal Nair, "Adaptive Filters Based on Eigenspace Projections," Dept. Electr. Eng., ASU, May 1998.
40. Min-Tau Lin, "An Improved Approach to Robust Speech Recognition Using Minimum Error Classification," Dept. Electr. Eng., ASU, December 1997. (Chair)
41. Sassan Ahmadi, "Low Bit Rate Coding based on the Sinusoidal Model," Dept. Electr. Eng., Aug. 1997. (Chair)
42. Mike Deisher, "State-Based Noise Reduction Using the Sinusoidal Speech Model," Dept. EE, ASU, May 1996 "
43. Philipos Loizou, Robust Speaker Independent Recognition of Alphabet Symbols," Dept. Electr. Eng., May. 1995. (Chair)
44. Q. Shen,"Single and Multiple Channel Block Adaptive Filters for Active Noise Cancellation," Dept. Electr. Eng., 1992.

M.S. Theses Supervision (12 listed / more than 40 advised)

1. Nandika Goyal, Quantum Machine Learning for Cancer Detection, December 2024. (Chair)
2. Leslie Miller, Quantum Image Fusion for Radar systems, July 2024. (Chair)
3. Max Yarter, Quantum Cloud and Edge Voice Recognition, 2023. (Chair)
4. Aradhita Sharma, Quantum Fourier transforms for Signal Analysis-Synthesis, August 2923.(Chair)
5. Jayden Booth, Massive MIMO systems, Co-Chair with A. Alkhateeb, June 2020.
6. Chinmay Dharmadhikari, Multidimensional Android Audio Signal Processing Algorithm and App, May 2016. (Chair)
7. Jie Fan, Matrix Filling for Array Processing, Dec. 2016. (Chair)
8. Shwetang Peshin, Solar Panel Array Simulation, Aug. 2016. (Co-Chair C. Tepedelenlioglu).
9. Deepta Rajan, Designing m-Health Modules with Sensor Interfaces for DSP Education, Nov. 2013. (Chair)

10. Girish Kalyanasundaram, Audio Processing and Loudness Estimation with iOS Simulations, Sep. 2013 (Chair)
11. Suhas Ranganath, Signal Processing Education Applications for the Android Platform, April 2013 (Chair)
12. Henry C. Braun+, Signal Processing and Robust Statistics for Fault Detection in Photovoltaic Arrays, , (co-chair C. Tepedelenlioglu) April 2012.

Professional and Scientific Service

- **Elected National Academy of Inventors (NAI), Senior Member, 2019**
- **Inducted in the ASU NAI Chapter, 2019.**
- **NAI Volunteer**

Major Scientific Service in IEEE Signal Processing Society

- Vice-President Conferences, IEEE Signal Processing Society, 2000-2002.
- Member Board of Governors, IEEE Signal Processing Society, 2000-2007.
-Member Executive Committee**,** IEEE Signal Processing Society, 2000-2002.
-Associate Editor**,** IEEE Signal Processing Letters, 2000-2002.
-Associate Editor**,** IEEE Transactions on Signal Processing, 1994-1997.
-General Conference Co-Chair, (with Dr. Cochran) 1999 IEEE International Conference on Acoustics Speech and -Signal Processing (ICASSP-99), Phoenix, March 1999.
-Founder and Chair Industry DSP Committee**,** IEEE Signal Processing Society, Spring 1999.

Local IEEE Activities

- IEEE Communications and Signal Processing (COMSOC/SP), Phoenix Chapter, ***Chair***, 1993-97, 2016-18.

Membership in National and International Committees

- Elected Member of the IEEE Circuits and Systems Society Technical Committee on DSP, 1992-99, 2011-present
- Elected Member of the IEEE SPS Education Committee, 2015-present
- Elected Member of the IEEE SPS Technical Committee on Statistical Signal & Array Processing, 1991-1997.
- Elected Member of the IEEE Signal Processing Conference Board, 1993-1999.
- Member Long Range Planning Committee, IEEE Signal Processing Society, 2005-2007.
- Member IEEE SPS Committee for Technical Committee Review, 2007.

Editorial Service

- Associate Editor**,** IEEE Signal Processing Letters, 2000-2002.
- Associate Editor**,** IEEE Transactions on Signal Processing, 1994-1997.
- Guest Co-Editor**,** IEEE Signal Processing Magazine, Special Issue on Industry Applications, Jan 2000.
- Guest Editor**,** IEEE Signal Processing Magazine, Special Issue on Industry DSP Technology, March 2000.
- Lecture Series Editor, Algorithms & Software for Engineering, Morgan & Claypool Publ., 2006-2023
- Book Series Editor, Springer Nature, 2023-present

ASU Committee Service

ECEE School Committees

- Quantum Information Processing, Search Committee, Chair 2020-21
- Systems Area Committee, Dept. EE, Member 1988-present, Chair 1998-2016.
- EE Graduate Committee, Chair 1996-97, Chair 2000-2008.
- Department Personnel (Promotion and Tenure) Committee, member, 1993-96, 1999-2000, 2004-2015, 2018-2021)
- Department Executive Committee, 1993-95.
- Undergraduate Committee, Dept. EE, member, 1988-89, 1989-90, 1990-91, 1991-92.
- Several Faculty Search Committees, Member and Chair

IAFSE Schools Committees

- DFAC (Deans promotion and tenure council), Chair, August 2021-present (coordinated more than 120 P&T evalauations)
- Deans Executive Committee, 2016-2021.
- Deans Personnel Committee, member, 2000-2003
- Dean's Research Council, Member 1994-1999
- Engineering Excellence 2000 Committee, Member November 1994-95
- EE Chair Search Committee, Member 1995-96 and 2005-2006.

University Committees

- AME Director Search Committee, 2020-21
- Communication Advisory Committee, Member 1993-96
- AME Personnel Committee, Member 2004-2012
- AME Search Committee, AY 2012-13.

NSF REU/RET Experiences (PI on NSF Workforce Development sponsored projects)

PI of 2024 NSF REU Program on Quantum Computing, Mentored or Co-mentored 12 students including students from MIT, Princeton, CMU, Cornell, ASU, Lafayette College, Notred Dame, Columbia University, UIUC and Georgia Tech.
PI of 2020-2026 SenSIP NSF RET, Mentored more than 15 teachers and community college faculty.
PI on 2019-2024 NSF IRES Program with University of Cyprus (trained 24 students)
PI of 2017-2022 SenSIP Devices and Algorithms NSF REU Site (Mentored or Co-mentored more than 10 REU Projects and reviewed and guided all 28 student reports and posters in the SenSIP REU Site.

Several Senior Undergraduate Capstone Projects Advised (more than 50 students advised)

New Courses and Course Materials Developed

- Redesigned Adaptive Signal Processing, offered Fall 2026, EEE596
- Co-Developed with Jennifer Blain, Sensors and Machine Learning Seminar Course, Spring 2018. (EEE517)
- Developed new online course Signal Processing for Digital Culture, Spring 2013. (EEE307)
- Developed an on-line course entitled MATLAB for DSP Applications, EEE509 is offered annually - summer online course.
- Developed an on-line laboratory Java-DSP for EEE 407, Fall 1998. (offered every semester since 1998) – (software won awards - used at MIT, Johns Hopkins and disseminated to over 25 schools). Redeveloped in 2017 in HTML 5.
- Developed and taught a 4 Credit senior-level undergraduate course in Digital Signal Processing entitled: "Digital Signal Processing," (EEE407/591). The purpose of this course is to introduce senior students to the principles of Digital Signal Processing. This course has become very popular among on-campus and off-campus students. (offered every semester)
- Developed DSP Algorithms and Software, Offered online (EEE509).
- Developed graduate level course titled: "Adaptive Filter Theory." (EEE606).
- Developed the "Speech Coding and Recognition Course," EEE607.
- Developed course titled: "Signal Processing Using Higher Order Statistics" (EEE 790).

Education Contributions, Course Evaluations and Teaching Materials Awards

- **2019 and 2020 Top 5% Teaching Awards** by the Fulton Schools of Engineering (IAFSE) based on student evaluations
- Education and Research Award from IEEE Region 6, 2018 (across 12 states)
- Nominated and finalist of the IEEE Signal Processing Education Award
- Two education papers received IEEE and ASEE best paper awards
- J-DSP education software received the 2012 NEEDS award at the IEEE FIE 2012 conference in Seattle
- Two text books in Audio Coding and Interactive DSP used in classes EEE607 and EEE407 respectively.
- Highly cited Proceedings of IEEE tutorial papers used in graduate classes – 2002 IEEE Donald Fink Award.

NAI References

H. Vincent Poor, Michael Henry Strater University Professor
Department of Electrical and Computer Engineering
Princeton University
IEEE Life Fellow, NAI Fellow
Elected Member, National Academy of Engineering
Princeton, New Jersey 08544

Kyriacos Athanasiou, Distinguished Professor
Henry Samueli Chair in Engineering, Biomedical Engineering
IEEE Fellow, NAI Fellow
Elected Member, National Academy of Engineering
University of California, Irvine
Irvine, CA 92697

Edward J. Delp
The Charles William Harrison Distinguished Professor of Electrical and Computer Engineering
Purdue University
IEEE Fellow, ACM Fellow, NAI Fellow
School of Electrical and Computer Engineering
West Lafayette, Indiana 47907-2035