

CURRICULUM VITAE

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EDUCATION

2002 Ph.D. Electrical Engineering, University of Arizona.

1995 M.S. Electrical Engineering, San Diego State University.

1992 B.S. Electronics and Telecommunications Engineering, Istanbul Technical University.

EMPLOYMENT

2015 – present Associate Professor, Department of Biomedical Engineering, Department of Electrical and Computer Engineering, Department of Medical Imaging (Radiology), The University of Arizona, Tucson, AZ.

2009 – 2015 Assistant Professor, Department of Biomedical Engineering, Department of Electrical and Computer Engineering, Department of Medical Imaging (Radiology), The University of Arizona, Tucson, AZ.

2004 – 2009 Research Assistant Professor, Department of Radiology, The University of Arizona, Tucson, AZ.

2003 – 2009 Research Assistant Professor, Department of Electrical and Computer Engineering, The University of Arizona, Tucson, AZ.

2004 – 2008 Co-founder, DTS AZ Research LLC, Tucson, AZ.

1995 – 2002 Graduate Research Associate, Department of Electrical and Computer Engineering, The University of Arizona, Tucson, AZ.

2001 – 2002 Graduate Research Associate, Department of Radiology, The University of Arizona, Tucson, AZ.

Summer 1997, 2000 Staff Research Assistant, Theory Division, Los Alamos National

Laboratory, Los Alamos, NM.

1993 – 1995 Graduate Research Assistant, Department of Electrical and Computer Engineering, San Diego State University, San Diego, CA.

1992 – 1995 Graduate Teaching Assistant, Department of Electrical and Computer Engineering, San Diego State University, San Diego, CA.

TECHNICAL PUBLICATIONS

Book Chapters

1. B. P. Berman, S. Mandava, A. Bilgin “On Compressed Sensing Reconstruction for Magnetic Resonance Imaging” in Computer Vision in Medical Imaging, C. H. Chen, Ed., World Scientific Publishing, 2013.
2. P. Kulkarni, A. Bilgin, M. W. Marcellin, J. C. Dagher, J. H. Kasner, T. J. Flohr, J. C. Rountree, “Compression of Earth Science Data with JPEG2000” in Hyperspectral Image Compression, G. Motta, F. Rizzo, and J. Storer, Eds., Springer, 2006.
3. A. Bilgin, M. W. Marcellin, “JPEG2000: Highly Scalable Image Compression,” in Handbook on Lossless Compression, K. Sayood, Ed., Academic Press, 2002.

Journal Articles

1. F. Liu, E. Ahanonu, M. W. Marcellin, Y. Lin, A. Ashok, A. Bilgin, “Visibility of Quantization Errors in Reversible JPEG2000,” to appear in Signal Processing: Image Communication.
2. L. Umopathy, B. Winegar, L. MacKinnon, M. Hill, M. I. Altbach, J. M. Miller and A. Bilgin, "Fully Automated Segmentation of Globes for Volume Quantification in CT Orbits Images Using Deep Learning", to appear in American Journal of Neuroradiology.
3. M. B. Keerthivasan, K. Johnson, M. Saranathan, Z. Fu, C. C. Weinkauff, D. R. Martin, A. Bilgin, M. I. Altbach, "An Efficient 3D Stack-of-Stars TSE Pulse Sequence for Simultaneous T2-weighted Imaging and T2 Mapping," Magnetic Resonance in Medicine, Vol. 82, Issue 1, pp. 326-341, July 2019.
4. S. Mandava, M. B. Keerthivasan, D. R. Martin, M. I. Altbach, A. Bilgin, “Radial Streak Artifact Reduction using Phased Array Beamforming,” Magnetic Resonance in Medicine, Vol. 81, Issue 6, pp. 3915-3923, June 2019.
5. Z. Li, A. Bilgin, K. Johnson, S. Vedantham, JP Galons, D. R. Martin, M. I. Altbach, “Rapid High-Resolution T1 Mapping using Highly Accelerated Radial Steady-State Free-Precession Acquisition,” Journal of Magnetic Resonance Imaging, Vol. 49, Issue 1, pp. 239-252, January 2019.

6. F. Liu, M. W. Marcellin, N. A. Goodman, A. Bilgin, "Compressive Detection of Direct Sequence Spread Spectrum Signals," *Electronics Letters*, Vol. 54, Issue 24, pp.1379-1381, December 2018.
7. S. Mandava, M. B. Keerthivasan, Z. Li, D. R. Martin, M. I. Altbach, A. Bilgin, "Accelerated MR Parameter Mapping with a Union of Local Subspaces Constraint," *Magnetic Resonance in Medicine*, Vol. 80, Issue 6, pp. 2744-2758, December 2018.
8. M. Khalid Khan Niazi, Y. Li, F. Liu, A. Ashok, M. W. Marcellin, G. Tozbikian, M. N. Gurcan, A. Bilgin "Pathological image compression for big data image analysis: Application to hotspot detection in breast cancer", *Artificial Intelligence in Medicine*, September 2018.
9. M. B. Keerthivasan, B. Winegar, J. L. Becker, A. Bilgin, M. I. Altbach and M. Saranathan, "Clinical Utility of a Novel Ultrafast T2 Weighted Sequence for Spine Imaging", *American Journal of Neuroradiology*, Vol. 39, Issue 8, pp. 1568-1575, August 2018.
10. M. B. Keerthivasan, S. Mandava, K. Johnson, R. Avery, R. Janardhanan, D. R. Martin, A. Bilgin, M. I. Altbach, "A Multi-band Double-Inversion Radial Fast Spin-Echo Technique for T2 Mapping of the Heart," *Journal of Cardiovascular Magnetic Resonance*, Vol. 20, No. 1, pp. 49, July 2018.
11. N.-K. Chen, H.-C. Chang, A. Bilgin, A. Bernstein, T. P. Trouard, "A Diffusion-Matched Principal Component Analysis (DM-PCA) based Two-Channel Denoising Procedure for High-Resolution Diffusion-Weighted MRI," *PLoS ONE*, Vol. 14, Issue 4, April 2018.
12. F. Liu, M. Hernandez-Cabrero, V. Sanchez, M. W. Marcellin, and A. Bilgin, "The Current Role of Image Compression Standards in Medical Imaging," *Information*, Vol. 8, Issue 4, (doi:10.3390/info8040131), October 2017.
13. A. Pandey, U. Yoruk, M. B. Keerthivasan, J.-P. Galons, P. Sharma, K. Johnson, D. R. Martin, M. I. Altbach, A. Bilgin, M. Saranathan, "Multiresolution Imaging using Golden Angle Stack-of-stars and Compressed Sensing for Dynamic MR Urography," *Journal Magnetic Resonance Imaging*, Vol. 46, Issue 1, pp. 303-311, July 2017.
14. F. Liu, M. W. Marcellin, N. A. Goodman and A. Bilgin, "Compressive Sampling for Detection of Frequency-Hopping Spread Spectrum Signals," in *IEEE Transactions on Signal Processing*, vol. 64, no. 21, pp. 5513-5524, November 2016.
15. J. F. Brand, L. R. Furenlid, M. I. Altbach, JP Galons, A. Bhattacharyya, P. Sharma, T. Bhattacharyya, A. Bilgin, and D. R. Martin, "Task-based optimization of flip angle for fibrosis detection in T1-weighted MRI of liver," *Journal of Medical Imaging*, Vol. 3, Issue 3, pp. 035502, July 2016.
16. H. Oh, A. Bilgin, M. Marcellin, "Visually Lossless JPEG2000 for Remote Image Browsing," *Information*, Vol. 7, Issue 3, July 2016.
17. B. P. Berman, A. Pandey, Z. Li, L. Jeffries, T. Trouard, I. Oliva, F. Cortopassi, D. R. Martin, M. I. Altbach, and A. Bilgin, "Volumetric MRI of the Lungs during Forced

Expiration,” *Magnetic Resonance in Medicine*, Vol. 75, Issue 6, pp. 2295-2302, June 2016.

18. Y. Kim, H. Oh, A. Bilgin, “Super Resolution Reconstruction Based on Block Matching and Three-Dimensional Filtering with Sharpening,” *IET Image Processing*, Vol. 9, Issue 12, p. 1048 – 1056, December 2015.
19. C. Huang, J.-P. Galons, C. G. Graff, E. W. Clarkson, A. Bilgin, B. Kalb, D. R. Martin, and M. I. Altbach, “Correcting Partial Volume Effect in Bi-exponential T2 Estimation of Small Lesions,” *Magnetic Resonance in Medicine*, Vol. 73, Issue 4, pp. 1632–1642, April 2015.
20. H.-S. Feng, M. W. Marcellin, and A. Bilgin, “A Methodology for Visually Lossless JPEG2000 Compression of Monochrome Stereo Images,” *IEEE Transactions on Image Processing*, Vol. 24, No. 2, pp.560-572, February 2015.
21. J. Dagher, T. Reese, A. Bilgin, “High resolution, large dynamic range field map estimation,” *Magnetic Resonance in Medicine*, Vol. 71, Issue 1, pp. 105–117, January 2014.
22. C. Huang, A. Bilgin, T. Barr, M. I. Altbach, “T2 Relaxometry with Indirect Echo Compensation from Highly Undersampled Data,” *Magnetic Resonance in Medicine*, Vol. 70, Issue 4, pp. 1026–1037, October 2013.
23. Y. Kim, H. Oh, A. Bilgin, “Video Compressed Sensing Using Iterative Self-similarity Modeling and Residual Reconstruction,” *Journal of Electronic Imaging*, Vol. 22, No. 2, pp. 021005, February 2013.
24. H. Oh, A. Bilgin, M. W. Marcellin, “Visually Lossless Encoding for JPEG2000,” *IEEE Transactions on Image Processing*, Vol. 22, No. 1, pp. 189-201, January 2013.
25. Y. Kim, M. S. Nadar, A. Bilgin, “Wavelet-based Compressed Sensing using a Gaussian Scale Mixtures Model,” *IEEE Transactions on Image Processing*, Vol. 21, No. 6, pp. 3102-3108, June 2012.
26. C. Huang, C. Graff, E. W. Clarkson, A. Bilgin, and M. I. Altbach, “T2 Mapping from Highly Undersampled Data by Reconstruction of Principal Component Coefficient Maps (REPCOM) Using Compressed Sensing,” *Magnetic Resonance in Medicine*, Vol. 67, pp. 1355-1366, 2012.
27. F. Auli-Llinas, A. Bilgin, M. W. Marcellin, “FAST Rate Allocation through Steepest Descent for JPEG2000 Video Transmission,” *IEEE Transactions on Image Processing*, Vol. 20, No. 4, pp. 1166-1173, July 2011.
28. H. G. Lalgudi, M. W. Marcellin, A. Bilgin, and M. S. Nadar, “View Compensated Compression of Volume Rendered Images for Efficient Remote Visualization,” *IEEE Transactions on Image Processing*, Vol. 18, No. 7, pp. 1501-1511, July 2009.
29. Z. Li, C. Graff, A. F. Gmitro, S. W. Squire, A. Bilgin, E. Outwater, and M. I. Altbach, “Rapid Water and Lipid Imaging with T2 Mapping Using a Radial IDEAL-GRASE

Technique," *Magnetic Resonance in Medicine*, Vol. 61, No. 6, pp. 1415-1424, June 2009.

30. R. Raguram, M. W. Marcellin and A. Bilgin, "Improved Resolution Scalability for Bi-Level Image Data in JPEG2000," *IEEE Transactions on Image Processing*, Vol. 18, No. 4, pp. 774-782, April 2009.
31. H. G. Lalgudi, A. Bilgin, M. W. Marcellin, and M. S. Nadar, "Compression of Multi-Dimensional Images Using JPEG2000," *IEEE Signal Processing Letters*, Vol. 15, pp. 393 – 396, 2008.
32. M. I. Altbach, A. Bilgin, I. Ata, V. L. Sorrell, "A double-inversion radial FSE and GRASE methods for the evaluation of cardiac masses," *Journal of Cardiovascular Magnetic Resonance*, Vol. 10, Suppl 1, A209, 2008.
33. Z. Wu, A. Bilgin, M. W. Marcellin, "Error Resilient Decoding of JPEG2000," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 17, No. 12, pp. 1752-1757, December 2007.
34. L. Pu, M. W. Marcellin, I. Djordjevic, B. Vasic, and A. Bilgin, "Joint Source-Channel Rate Allocation in Parallel Channels," *IEEE Transactions on Image Processing*, Vol. 16, No. 8, pp. 2016-2022, August 2007.
35. Z. Li, A. F. Gmitro, A. Bilgin, M. I. Altbach, "Fast Decomposition of Water and Lipid Using a GRASE Technique with the IDEAL Algorithm," *Magnetic Resonance in Medicine*, Vol. 57, No. 6, pp.1047-1057, June 2007.
36. L. Pu, M. W. Marcellin, B. Vasic and A. Bilgin, "Unequal error protection and progressive decoding for JPEG2000", *Signal Processing: Image Communication, Special Issue on Mobile Video*, Vol. 22, No. 3, pp. 340-346, March 2007.
37. M. W. Marcellin and A. Bilgin, "Layered Rate Allocation for Digital Cinema," *SMPTE Motion Imaging Journal*, pp. 80-86, Feb/March 2007.
38. L. Pu, Z. Wu, A. Bilgin, M. W. Marcellin, B. Vasic, "LDPC-Based Iterative Joint Source-Channel Decoding for JPEG2000," *IEEE Transactions on Image Processing*, Vol. 16, No. 2, pp. 577-581, February 2007.
39. K. Krishnan, M. W. Marcellin, A. Bilgin, M. S. Nadar, "Efficient Transmission of Compressed Data for Remote Volume Visualization", *IEEE Transactions on Medical Imaging*, Vol. 25, No. 9, pp. 1189-1199, September 2006.
40. M. I. Altbach, Z. Li, A. Bilgin, F. I. Marcus, V. Sorrell, A. F. Gmitro, and D. A. Bluemke, "Interleaved Acquisition of Lipid and Water Images of the Heart Using a Double Inversion Fast Spin-Echo Method," *Magnetic Resonance in Medicine*, Vol. 54, No. 6, pp. 1562-1568, December 2005.
41. Z. Wu, A. Bilgin, M. W. Marcellin, "Joint Source/Channel Coding for Multiple Images," *IEEE Transactions on Communications*, Vol. 53, No. 10, pp. 1648-1654, October 2005.

42. M. I. Altbach, A. Bilgin, Z. Li, E. W. Clarkson, T. P. Trouard, and A. F. Gmitro, "Post-processing Methods for Obtaining T2 Estimates from a Single Radial Fast-spin Echo K-space Data Set," *Magnetic Resonance in Medicine*, Vol. 54, pp. 549-559, September 2005.
43. Z. Wu, A. Bilgin, M. W. Marcellin, "Joint Source/Channel Coding for Image Transmission with JPEG2000 over Memoryless Channels," *IEEE Transactions on Image Processing*, Vol. 14, No. 8, pp. 1020-1032, August 2005.
44. M. W. Marcellin and A. Bilgin, "JPEG 2000 For Digital Cinema," *SMPTE Motion Imaging Journal*, Vol. 114, No. 5-6, pp. 202-209, May/June 2005.
45. J. C. Dagher, A. Bilgin, M. W. Marcellin, "Resource-Constrained Rate Control for Motion JPEG2000," *IEEE Transactions on Image Processing*, Vol. 12, No. 12, pp. 1522-1529, December 2003.
46. A. Bilgin, M. W. Marcellin, M. I. Altbach, "Compression of Electrocardiogram Signals using JPEG2000," *IEEE Transactions on Consumer Electronics*, Vol. 49, No. 4, pp. 833-840, November 2003.
47. M. W. Marcellin, M. A. Lepley, A. Bilgin, T. J. Flohr, T. T. Chinen, J. H. Kasner, "An Overview of Quantization in JPEG-2000," (**invited paper**), *Signal Processing: Image Communications*, Special Issue on JPEG-2000, Vol. 17, Issue 1, pp. 73-84, January 2002.
48. M. W. Marcellin, A. Bilgin, "Quantifying the Parent-Child Coding Gain in Zero-tree Based Coders," *IEEE Signal Processing Letters*, Vol. 8, No. 3, pp. 67-69, March 2001.
49. A. Bilgin, P. J. Sementilli, F. Sheng, M. W. Marcellin, "Scalable Image Coding Using Reversible Integer Wavelet Transforms," *IEEE Transactions on Image Processing*, Vol. 9, No. 11, pp. 1972-1977, November 2000.
50. A. Bilgin, G. Zweig, M. W. Marcellin, "Three-Dimensional Image Compression using Integer Wavelet Transforms," (**invited paper**), *Applied Optics: Information Processing*, Special Issue on Information Theory in Optoelectronic Systems, Vol. 39, No. 11, pp. 1799-1814, 10 April 2000.
51. D. G. Sheppard, K. Panchapakesan, A. Bilgin, B. R. Hunt, M. W. Marcellin, "Lapped Nonlinear Interpolative Vector Quantization and Image Super-Resolution," *IEEE Transactions on Image Processing*, Vol. 9, No. 2, pp. 295-298, February 2000.
52. A. Bilgin, P. J. Sementilli, M. W. Marcellin, "Progressive Image Coding Using Trellis Coded Quantization," *IEEE Transactions on Image Processing*, Vol. 8, No. 11, pp. 1638--1643, November 1999.
53. D. G. Sheppard, A. Bilgin, M. S. Nadar, B. R. Hunt, M. W. Marcellin, "A Vector Quantizer for Image Restoration," *IEEE Transactions on Image Processing*, Vol. 7, No. 1, pp. 119--124, January 1998.

Conference Papers/Presentations

1. Z. Fu, H. W. Tseng, S. Vedantham, A. Karellas, and A. Bilgin, "Dedicated Breast CT: Comparative evaluation of multi-scale residual dense network and residual encoder-decoder network for deep learning-driven sparse-view reconstruction," to appear in the 2020 Annual Meeting of the American Association of Physicists in Medicine, Vancouver, BC, Canada, July 2020.
2. L. Umapathy, G. Guzman Perez-Carrillo, M. B. Keerthivasan, M. I. Altbach, B. Winegar, C. Weinkauff, A. Bilgin, "StackGen-Net: A Stacked Generalization of 3D Orthogonal Convolutional Neural Networks for Improved Detection of White Matter Hyperintensities," in Proc. of 2020 Annual Meeting of the ISMRM, Sydney, Australia, April 2020.
3. E. Ahanonu, M. W. Marcellin, A. Bilgin, "Lossless Multi-Component Image Compression based on Integer Wavelet Coefficient Prediction using Convolutional Neural Networks," in Proc. of 2020 IEEE Data Compression Conference, March 24-27, 2020, Snowbird, UT.
4. Z. Fu, H. Tseng, S. Vedantham, A. Karellas, A. Bilgin, "Deep learning-driven sparse-view reconstruction for radiation dose reduction in dedicated breast CT: Quantitative evaluation," 105th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), December 1–6, 2019, Chicago, IL.
5. Z. Fu, S. Mandava, Z. Li, D. R. Martin, M. I. Altbach, and A. Bilgin, "Deep Parameter Mapping with Relaxation Signal Model Driven Constraints," in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.
6. L. Umapathy, W. Unger, F. Shareef, H. Arif, D. R. Martin, M. I. Altbach, and A. Bilgin, "A Cascaded Residual UNET for Fully Automated Segmentation of Prostate and Peripheral Zone in T2-weighted 3D Fast Spin Echo Images," in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.
7. L. Umapathy, G. Guzman, J. Rosado-Toro, G. Kuyumcu, M. I. Altbach, B. Winegar, and A. Bilgin, "Detection of White Matter Hyperintensities using Ensemble 3D Deep Learning Networks," in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.
8. M. B. Keerthivasan, K. Johnson, A. Bilgin, C. Weinkauff, and M. I. Altbach, "Efficient T2 Mapping of the Carotid Artery using a 3D Stack-of-Stars Variable Flip Angle TSE Pulse Sequence," in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.
9. M. B. Keerthivasan, Z. Li, J.-P. Galons, K. Johnson, B. Kalb, D. R. Martin, A. Bilgin, and M. I. Altbach, "Characterization of Abdominal Neoplasms using a Fast Inversion Recovery Radial SSFP T1 Mapping Technique," in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.
10. S. Mandava, M. K. Keerthivasan, D. R. Martin, M. I. Altbach, and A. Bilgin, "Radial streak artifact reduction in multi-contrast imaging and parameter mapping using

beamforming,” in Proc. of 2019 Annual Meeting of the ISMRM, Montreal, QC, Canada, May 2019.

11. Y. Lin, F. Liu, A. Bilgin, M. W. Marcellin, A. Ashok, “Perception-Optimized Encoding for Visually Lossy Image Compression,” in Proc. of 2019 IEEE Data Compression Conference, Snowbird, UT, March 2019.
12. E. Ahanonu, M. W. Marcellin, A. Bilgin, “Clustering Regression Wavelet Analysis for Lossless Compression of Hyperspectral Imagery,” in Proc. of 2019 IEEE Data Compression Conference, Snowbird, UT, March 2019.
13. Z. Fu, S. Mandava, M. B. Keerthivasan, Z. Li, D. R. Martin, M. I. Altbach, and A. Bilgin, “MR Parameter Mapping Using Sequential Multi-Contrast Acquisitions & Multi-Input Multi-Scale ResNet,” in Proc. of ISMRM Workshop on Machine Learning Part II, Washington, DC, October 2018.
14. M. I Altbach, S. Mandava, K. Johnson, Z. Li, M. B. Keerthivasan, J. Becker, A. Bilgin, and Craig Weinkauff, “Rapid Carotid Artery T2 and T1 Mapping Using a Radial TSE and IR-FLASH Approach,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
15. S. Mandava, M. B. Keerthivasan, D. R. Martin, M. I. Altbach, and A. Bilgin, “Radial streaking artifact reduction using phased array beamforming,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
16. S. Mandava, M. B. Keerthivasan, D. R. Martin, M. I. Altbach, and A. Bilgin, “Higher-order subspace denoising for improved multi-contrast imaging and parameter mapping,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
17. S. Mandava, Z. Li, D. R. Martin, M. I. Altbach, and A. Bilgin, “A non-local low rank approach for high resolution parameter mapping,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
18. Z. Fu, S. Mandava, M. B. Keerthivasan, D. R. Martin, M. I. Altbach, and A. Bilgin, “A Multi-Scale Deep ResNet for MR Parameter Mapping,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
19. M. B. Keerthivasan, K. Johnson, M. Saranathan, C. Weinkauff, D. Martin, A. Bilgin, and M. Altbach, “An Optimized 3D Stack-of-Stars TSE Pulse Sequence for Simultaneous T2-weighted Imaging and T2 Mapping,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
20. M. B. Keerthivasan, D. Blew, J. P. Galons, D. Martin, A. Bilgin, and M. Altbach, “Characterization of Abdominal Neoplasms using a Fast T2 Mapping Radial TSE Technique,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
21. M. B. Keerthivasan, B. Winegar, U. Udayasankar, A. Bilgin, M. Altbach, M. Saranathan, “An Optimized Single-shot Sequence for Fast T2W Imaging of the Brain,” in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.

22. A. Pandey, M. Saranathan, W. D. Unger, M. B. Keerthivasan, J. P. Galons, D. R. Martin, A. Bilgin, K. Johnson, and M. I. Altbach, "Quantifying hepatic fibrosis using 3D radial golden angle stack-of stars acquisition and a dual input two compartment model," in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
23. L. Umapathy, M. B. Keerthivasan, J. P. Galons, W Unger, D. Martin, M. I. Altbach, and A. Bilgin, "A Comparison of Deep Learning Convolutional Neural Networks for Liver Segmentation in Radial Turbo Spin Echo Images," in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
24. Z. Li, A. Bilgin, K. Johnson, JP. Galons, M. Saranathan, D, R, Martin, and M. I. Altbach, "Rapid multi-slice abdominal T1 mapping with IR-radSSFP," in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
25. Z. Li, A. Bilgin, K. Johnson, H. Arif, D. R. Martin, and M. I. Altbach, "High-resolution 3D T1 mapping of the prostate with an efficient inversion-recovery radial FLASH," in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
26. N.-K. Chen, H.-C. Chang, A. Bilgin, A. Bernstein, T. Trouard, "A diffusion-matched principal component analysis (DM-PCA) based denoising procedure for high-resolution diffusion-weighted MRI," in Proc. of 2018 Meeting of the ISMRM, Paris, France, June 2018.
27. E. Ahanonu, M. W. Marcellin, and A. Bilgin, "Lossless Image Compression Using Reversible Integer Wavelet Transforms and Convolutional Neural Networks," in Proc. of 2018 IEEE Data Compression Conference, Snowbird, UT, March 2018.
28. F. Liu, Y. Lin, M. Hernandez-Cabronero, E. Ahanonu, M. W. Marcellin, A. Ashok, and A. Bilgin, "A Visual Discrimination Model for JPEG2000 Compression," in Proc. of 2018 IEEE Data Compression Conference, Snowbird, UT, March 2018.
29. Y. Lin, A. Ashok, M. W. Marcellin, and A. Bilgin, "Task-Based JPEG 2000 Image Compression: An Information-Theoretic Approach," in Proc. of 2018 IEEE Data Compression Conference, Snowbird, UT, March 2018.
30. S. Mandava, A. Ashok, and A. Bilgin, "Deep learning based Sparse View X-ray CT Reconstruction for Checked Baggage Screening," in Proc. of SPIE, Anomaly Detection and Imaging with X-Rays (ADIX) III, SPIE Defense + Security, Orlando, FL, April 2018.
31. A. Ashok, S. Mandava, R. Thamvichai, A. Bilgin, D. Coccarelli, J. A. Greenberg, M. E. Gehm, "Sparse View Bag Reconstruction vis-a-vis Threat Detection," Concealed Explosive Detection (CED) Workshop, Charlottesville, VA, November 2017.
32. A. Pandey, J.P. Galons, K. Johnson, D. R. Martin, M. I. Altbach, A. Bilgin, and M. Saranathan, "Glomerular Filtration rate estimation in vivo using 3D radial MRI and a novel multiresolution reconstruction technique", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.

33. M. B. Keerthivasan, M. Saranathan, J. P. Galons, D. R Martin, A. Bilgin, and M. I. Altbach, "Variable Flip Angle Radial Turbo Spin Echo Technique for Abdominal T2 Mapping, in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
34. M. B. Keerthivasan, M. Saranathan, A. Bilgin, D. R Martin, and M. I. Altbach, "High-resolution 3D T2 mapping using a stack-of-stars radial FSE pulse sequence", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
35. M. B. Keerthivasan, A. Bilgin, D. R Martin, J. L Becker, M. Altbach, and M. Saranathan, "Clinical utility of a novel ultrafast T2 Weighted sequence for Spine Imaging", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
36. Y. Natsuaki, M. B. Keerthisavan, A. Bilgin, B. D Bolster, K. J Johnson, X. Bi, G. Laub, and M. I Altbach, "Flexible and Efficient 2D Radial TSE T2 Mapping with Tiered Echo Sharing and with "Pseudo" Golden Angle Ratio Reordering", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
37. L. Umapathy, J. Brand, J.-P. Galons, L. Furenlid, D. R. Martin, M. I. Altbach, and A. Bilgin, "Wavelet based Texture Analysis of Liver Fibrosis in Delayed Phase Gadolinium-Enhanced T1-weighted in vivo Images", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
38. S. Mandava, M. B Keerthivasan, M. I Altbach and A. Bilgin. "Compressive T2 Mapping with Non-Local Clustering and Subspace Constraints", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
39. Z. Li, A. Bilgin, D. R. Martin, M. I. Altbach, "Fast high-resolution 3D T1 mapping using a highly accelerated radial inversion-recovery FLASH technique", in Proc. of 2017 Meeting of the ISMRM, Honolulu, Hawaii, April 2017.
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3. A. Bilgin, T. P. Trouard, A. F. Gmitro, M. I. Altbach, "Randomly Perturbed Radial Trajectories for Compressed Sensing MRI," Arizona Alzheimer's Consortium Annual Meeting, May 2008.
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1. M. W. Marcellin, A. Bilgin, "Hyperspectral Image Compression," Signal Processing and Coding Laboratory Final Report, Dept. of E.C.E, University of Arizona, December 14, 1999.
2. H. Abut, L. A. Wherry, R.M. Bernardi, Y. Öztürk, M. D. Callaghan, A. Bilgin, D. S. Erickson, A. P. Yznaga, P. A. Powell, "System Manual Draft: Visual Image Verification for I-15 Reversible High-Occupancy Vehicle Lanes," Digital Signal Processing and Communications Laboratories Progress Report, Department of E.C.E., SDSU, June 22, 1993.

Dissertation

A. Bilgin, "Scalable Compression of Imagery," Ph.D. Dissertation, Department of Electrical and Computer Engineering, University of Arizona, 2002.

Thesis

A. Bilgin, "Image Processing and Compression for Intelligent Vehicle/Highway Systems," Master's Thesis, Department of Electrical and Computer Engineering, San Diego State University, 1995.

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INTRAMURAL SERVICE

- Member, Arizona Cancer Center, 2015-present.
- Member, Magnetic Resonance Imaging Operations Committee, 2014 – present.
- Member, Applied Mathematics Graduate Interdisciplinary Program, 2013-present.
- Member, BIO5 Institute, 2009-present.
- Member, Advanced Research Institute for Biomedical Imaging (ARIBI), 2009-present.

- Chair, Biomedical Engineering, Awards Committee, 2010-present.
- Member, Biomedical Engineering, Graduate Studies Committee, 2017-present.
- Member, College of Engineering, Sabbatical Review Committee, 2019.
- Member, Electrical & Computer Engineering, Undergraduate Studies Committee, 2019-2020.
- Member, Applied Mathematics Graduate Interdisciplinary Program, Executive Committee, 2014-2019.
- Member, University Imaging Cluster Faculty Search Committee, 2017-2018.
- Member, Biomedical Engineering, Faculty Search Committee, 2017-2018.
- Member, Electrical & Computer Engineering, Peer Review Committee, 2017-2018.
- Chair, Biomedical Engineering Graduate Interdisciplinary Program, Resources Committee, 2013-2017.

- Member, Biomedical Engineering Graduate Interdisciplinary Program, Executive Committee, 2013-2018.
- Member, College of Engineering, Inclusive Excellence Committee, 2017.
- Member, Electrical & Computer Engineering, Graduate Recruiting and Awards Committee, 2014-2016.
- Reviewer, Office for Research and Discovery, Pilot Interdisciplinary Project Grants, 2016.
- Member, College of Engineering, Post Tenure Review Audit Committee, 2015-2016.
- Member, University Imaging Cluster Faculty Search Committee, 2015.
- Member, College of Engineering, University Fellow Award Nomination Committee, 2015.
- Member, Imaging Strategic Planning Workshop, Executive Committee, 2015.
- Member, Biomedical Engineering, Promotion and Tenure Committee, 2015.
- Chair, Biomedical Engineering, Faculty Search Committee, 2015.
- Member, Biomedical Engineering, Academic Program Review Committee, 2015.
- Member, UA Astronaut Scholarship Nomination Committee, 2013.
- Member, Electrical & Computer Engineering, Computer Policy Committee, 2012-2013.
- Member, Electrical & Computer Engineering, Instructional Equipment & Software Planning Committee, 2012-2013.
- Member, Biomedical Engineering Program Committee, 2009 – 2013.
- Mentor, Arizona Assurance Scholars Program, 2009 – 2014.
- Member, Biomedical Engineering Graduate Interdisciplinary Program, 2009-2017.
- Affiliate Member, Applied Mathematics Graduate Interdisciplinary Program, 2009-2013.
- Member, UA Astronaut Scholarship Nomination Committee, 2012.
- Member, Electrical & Computer Engineering, Graduate Studies Committee, 2010-2012.

EXTRAMURAL SERVICE

- Associate Editor, IEEE Transactions on Computational Imaging, 2014 – 2019.
- Associate Editor, IEEE Transactions on Image Processing, 2010 – 2014.
- Associate Editor, IEEE Signal Processing Letters, 2010 – 2012.
- Technical Program Co-Chair, 2013-2021 IEEE Data Compression Conference, Snowbird, UT.
- Member, Program Committee, Anomaly Detection and Imaging with X-Rays (ADIX), SPIE Defense+Security, 2016-2020.
- Session Chair, 2019 IEEE Data Compression Conference, Snowbird, UT.
- Session Chair, 2014 IEEE Data Compression Conference, Snowbird, UT.
- Area Chair, 2014 International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy.
- Area Chair, 2013 IEEE International Conference on Image Processing (ICIP), Melbourne, Australia.
- Area Chair, 2013 International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Vancouver, Canada.
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- Area Chair, 2011 IEEE International Conference on Image Processing (ICIP), Brussels, Belgium.
- Technical Program Committee Member, 2011 European Conference on Signal Processing (EUSIPCO), Barcelona, Spain.
- Technical Program Committee Member, 2011 IEEE International Conference on Multimedia and Expo (ICME 2011), Barcelona, Spain.
- Guest Co-Editor, IEEE Communications Society Multimedia Communication Technical Committee E-letter, Special Issue on "Compression Technologies for Medical Applications," July 2011.
- Session Chair, 2011 IEEE Data Compression Conference, Snowbird, UT.
- Technical Program Committee Member, 2011 IEEE Data Compression Conference, Snowbird, UT.
- Session Chair, 2010 IEEE International Conference on Image Processing (ICIP), Hong Kong.
- Session Chair, 2010 IEEE Data Compression Conference, Snowbird, UT.
- Technical Program Committee Member, 2010 European Conference on Signal Processing (EUSIPCO), Aalborg, Denmark.
- Technical Program Committee Member, 2010 IEEE Data Compression Conference, Snowbird, UT.
- Member, Visual Communications and Image Processing (VCIP) Conference Advisory Board, 2010.
- Session Chair, 2009 IEEE Data Compression Conference, Snowbird, UT.
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- Technical Program Committee Member, 2005 IEEE International Conference on Image Processing (ICIP), Italy.
- Technical Program Committee Member, 2004 IEEE International Conference on Image Processing (ICIP), Singapore.
- Publicity Co-chair, 2006 Mobile Multimedia Communications Conference (MobiMedia), Alghero, Italy.
- Exhibits Co-chair, 2000 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Istanbul, Turkey.
- External Peer Reviewer for Promotion and Tenure.
- Grant reviewer for National Institutes of Health.
- Grant reviewer for Arizona Alzheimer Consortium.
- Grant reviewer for Qatar National Research Fund.
- Grant reviewer for Engineering and Physical Sciences Research Council (EPSRC), United Kingdom.
- Grant reviewer for Natural Sciences and Engineering Research Council (NSERC) of Canada.
- Journal Peer Reviewer for
 - ACM Multimedia Systems Journal.
 - BMC Bioinformatics.
 - Computer Methods and Programs in Biomedicine.
 - Computers in Biology and Medicine.
 - Digital Signal Processing.
 - Electronic Letters on Computer Vision and Image Analysis.
 - Engineers Australia Technical Journals.
 - EURASIP Journal on Advances in Signal Processing.
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 - IEEE Communications Letters.
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- Conference Peer Reviewer for
 - 2019 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Montreal, Canada, May 2019.
 - 2019 IEEE Data Compression Conference, Snowbird, UT, March 2019.
 - 2019 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brighton, UK, May 2019.
 - 2018 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Paris, France, June 2018.
 - 2017 IEEE Data Compression Conference, Snowbird, UT, April 2017.
 - 32nd Picture Coding Symposium, Nuremberg, Germany, December 2016.
 - 2016 IEEE Data Compression Conference, Snowbird, UT, March 2016.
 - 2016 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Shanghai, China.
 - 31st Picture Coding Symposium, Cairns, Australia, June 2015.

- 2015 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brisbane, Australia.
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- 2014 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Florence, Italy.
- 2014 IEEE Data Compression Conference, Snowbird, UT, March 2014.
- 30th Picture Coding Symposium, San Jose, CA, December 2013.
- 2013 IEEE International Conference on Image Processing (ICIP), Melbourne, Australia.
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- 2013 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Vancouver, Canada.
- 2013 IEEE Data Compression Conference, Snowbird, UT, March 2013.
- 2012 European Signal Processing Conference (EUSIPCO), Bucharest, Romania.
- 2012 IEEE International Conference on Image Processing (ICIP), Orlando, Florida, September 2012.
- 29th Picture Coding Symposium, Krakow, Poland, May 2012.
- 2012 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Melbourne, Australia, May 2012.
- 2012 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Kyoto, Japan, March 2012.
- 2011 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Montreal, Canada, May 2011.
- 2011 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Prague, Czech Republic, May 2011.
- 2010 IEEE International Conference on Image Processing (ICIP), Hong Kong, September 2010.
- 2010 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Honolulu, HI, July 2010.
- 2010 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Stockholm, Sweden, May 2010.

- 2010 IEEE International Symposium on Circuits and Systems (ISCAS), Paris, France, May 2010.
- 2010 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Dallas, TX, March 2010.
- 16th International Conference on Digital Signal Processing (DSP2009), Santorini, Greece, July 2009.
- 2009 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii, April 2009.
- 2009 IEEE International Conference on Image Processing (ICIP), Cairo, Egypt, November 2009.
- 2009 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Cape Town, South Africa.
- 2009 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Taipei, Taiwan, April 2009.
- 2008 IEEE International Conference on Image Processing (ICIP), San Diego, CA.
- 2008 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Boston, MA, July 2008.
- 2008 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Las Vegas, NV, March 2008.
- 2007 European Signal Processing Conference (EUSIPCO), Poznan, Poland.
- 2007 IEEE International Conference on Image Processing (ICIP), San Antonio, TX.
- 2007 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Honolulu, HI, May 2007.
- 2006 Fifth International Symposium on Communications Systems, Networks and Digital Signal Processing (CSNDSP), Patras, Greece, July 2006.
- 2006 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Toulouse, France, May 2006.
- 2006 IEEE International Symposium on Circuits and Systems (ISCAS), Kos, Greece, May 2006.
- 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Philadelphia, PA, March 2005.

MEMBERSHIPS

- Senior Member, The Institute of Electrical and Electronics Engineers (IEEE).
- Member, The International Society for Magnetic Resonance in Medicine (ISMRM).
- Member, International Society for Optical Engineering (SPIE).
- Member, Society of Motion Picture and Television Engineers (SMPTE).
- Member, International Organization for Standardization (ISO)/ International Electrotechnical Commission (IEC)/ Joint Technical Committee (JTC) 1 /Subcommittee (SC) 29/ Working Group (WG) 1: Joint Photographic Experts Group (JPEG)/ Joint Bi-level Image experts Group (JBIG).

HONORS AND AWARDS

- Biomedical Engineering Graduate Interdisciplinary Program, Builder's Day Award, 2015.
- Invited Afternoon (Keynote) Speaker, 2012 Data Compression Conference, Snowbird, Utah, April 2012.
- Invited to participate in National Academies Keck Futures Initiative, 2010.
- Elected Senior Member of the IEEE in 2008.
- Meritorious Service Award, Istanbul Technical University Alumni Association.
- **Teaching Awards**
 - Excellence at the Student Interface Award, Most Supportive Senior Faculty, 2016.
 - Excellence at the Student Interface Award, Most Supportive Junior Faculty, 2015.
 - Excellence at the Student Interface Award, Most Supportive Junior Faculty, 2013.
 - Excellence at the Student Interface Award, Most Supportive Junior Faculty, 2012.
- **Paper Awards**
 - ISMRM Merit Award, Magna Cum Laude, for the paper "StackGen-Net: A Stacked Generalization of 3D Orthogonal Convolutional Neural Networks for Improved Detection of White Matter Hyperintensities," August 2020.
 - Blue Ribbon Award, for the paper "Dedicated Breast CT: Comparative evaluation of multi-scale residual dense network and residual encoder-decoder network for deep learning-driven sparse-view reconstruction," in 2020 Annual Meeting of the American Association of Physicists in Medicine, Vancouver, BC, Canada, July 2020.

- ISMRM Merit Award, Magna Cum Laude, for the paper “Efficient T2 Mapping of the Carotid Artery using a 3D Stack-of-Stars Variable Flip Angle TSE Pulse Sequence,” 2019.
- ISMRM Merit Award, Magna Cum Laude, for the paper “A Cascaded Residual UNET for Fully Automated Segmentation of prostate and peripheral zone in T2-weighted 3D Fast Spin Echo Images,” 2019.
- ISMRM Merit Award, Magna Cum Laude, for the paper “Rapid Carotid Artery T2 and T1 Mapping Using a Radial TSE and IR-FLASH Approach,” 2018.
- ISMRM Merit Award, Magna Cum Laude, for the paper “Radial streaking artifact reduction using phased array beamforming,” 2018.
- ISMRM Merit Award, Magna Cum Laude, for the paper “Characterization of Abdominal Neoplasms using a Fast T2 Mapping Radial TSE Technique,” 2018.
- ISMRM Merit Award, Magna Cum Laude, for the paper “A Multi-scale Deep ResNet for Radial MR Parameter Mapping,” 2018.
- ISMRM Merit Award, Summa Cum Laude, for the paper “Improved Slice Coverage in DBIR-FSE with Multi-Band Encoding,” 2015.
- ISMRM Merit Award, Summa Cum Laude, for the paper “Isotropic T2 Mapping using a 3D Radial FSE (or TSE) Pulse Sequence,” 2015.
- Top 10% Paper Recognition for the paper “Lossless Image Compression Using Causal Block Matching and 3D Transform-Domain Collaborative Filtering,” at IEEE International Conference on Image Processing, 2014.
- ISMRM Merit Award, Summa Cum Laude, for the paper “Accelerating Encoded Simultaneous Multi Slice MRI with Compressed Sensing,” 2013.
- ISMRM Merit Award, Magna Cum Laude, for the paper “A Variable Bandwidth Radial Gradient and Spin-Echo (VB-radGRASE) Method for Improved T2 and Fat-Water Parameter Estimation,” 2013.
- ISMRM Merit Award, Magna Cum Laude, for the paper “Automated Segmentation of Liver Parenchyma and Blood Vessel with in-vivo Radial Gradient and Spin-Echo (GRASE) Datasets for Characterization of Diffuse Liver Disease,” 2013.
- Faculty Advisor (w/ Michael W. Marcellin) to Han Oh who was awarded ECE Department Outstanding Graduate Student Award, Fall 2011.

- Faculty Advisor (w/ Michael W. Marcellin) for First Place Graduate Student Paper Award at 2010 International Telemetry Conference: Han Oh, "Visually Lossless Compression Based on JPEG 2000 for Efficient Transmission of High Resolution Color Aerial Images."
- Faculty Advisor (w/ Michael W. Marcellin) for Best Student Paper Finalist at First International Workshop on Quality of Multimedia Experience (QOMEX 2009) Han Oh, "Visibility Thresholds for Quantization Distortion in JPEG2000."
- Faculty Advisor (w/ Michael W. Marcellin and William E. Ryan) for First Place Award for Undergraduate Student Paper at 2008 International Telemetry Conference: Kristin Jagiello, Mahmut Zafer Aydin and Wei-Ren NG, "Joint JPEG2000/LDPC Code System Design for Image Telemetry."
- Best Student Paper Award, 1998 SIU.