MEHMET AKÇAKAYA, PH.D.

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ACADEMIC APPOINTMENTS

University of Minnesota — Minneapolis, MN, USA
Assistant Professor, Department of Electrical and Computer Engineering — 2015-present
Faculty, Center for Magnetic Resonance Research

Beth Israel Deaconess Medical Center, Harvard Medical School — Boston, MA, USA
Senior Research Scientist/Instructor, Department of Medicine (Cardiovascular Division) — 2012-15

EDUCATION

Harvard Medical School (Beth Israel Deaconess Medical Center) — Boston, MA, USA
Post-doctoral Research Fellow, Department of Medicine (Cardiovascular Division) — 2010-12
Mentors: Dr. Reza Nezafat and Dr. Warren J. Manning

Harvard University — Cambridge, MA, USA
Ph. D. in Engineering Sciences — 2005-10
S. M. in Applied Mathematics
PhD Thesis: An Information Theoretic Approach to Compressed Sensing and Its Utility in Magnetic Resonance Imaging
Advisor: Dr. Vahid Tarokh

McGill University — Montreal, QC, Canada
B. Eng. In Electrical Engineering (Honours) with Great Distinction — 2001-05
Minor in Computer Science
GPA: 3.99/4.00, Concentration: Telecommunications
Thesis: Iterative Maps, Nonlinear Dynamics, and Performance Evaluation for Turbo Codes

SELECTED HONORS AND AWARDS

CAREER Award	NSF	2017
- NSF's most prestigious award in support of early-career faculty.		
Junior Fellow	ISMRM	2013
- Awarded to outstanding early-career researchers in MRI.		
Early Career Award Finalist (Basic Science Research)	SCMR	2012
- Finalist for original basic science research in cardiac MRI.		
Early Career Award Finalist (Basic Translational Research)	SCMR	2012
- Finalist for original basic translational research in cardiac MRI.		
Regional Scholarship	SCMR	2012
I. I. Rabi Young Investigator Award Finalist	ISMRM	2011
- One of the three finalists for original technical research in magnetic resonance		
Travel Award	ISMRM	2010-11, 13
John Parker Bequest Fellowship	Harvard University	2008
- Awarded to outstanding Ph.D. students in natural sciences.		
GSAS Merit Fellowship	Harvard University	2008
- Awarded to one Ph.D. student in each department for outstanding academic performance.		

Certificate of Distinction in Teaching	Harvard University	2006
- For AM 106/206 Applied Algebra and Combinatorics.		
Herbert S. Winokur, Jr. Fellowship in Decision Sciences	Harvard University	2006
- Awarded to one Ph.D. student for outstanding performance in decision sciences		
School of Engineering and Applied Sciences Fellowship	Harvard University	2005
Charles Michael Morssen Gold Medal	McGill University	2005
- Awarded to one graduating student in engineering for exceptional engineering promise		
Professor Gar Lam Yip Memorial Prize	McGill University	2005
James McGill Award	McGill University	2004
AAPN eMPOWR Research Award	McGill University	2004
- Awarded for excellence in undergraduate research		
Motorola Foundation Scholarship	McGill University	2003
Morris Wilson Scholarship	McGill University	2001-05

RESEARCH FUNDING

NIH NHLBI K99/R00 HL111410-01
Novel Accelerated Contrast-Enhanced High Resolution Coronary MRI 2012-18
The goal of this study is to develop and validate techniques for accelerated cardiac MRI, offering better volumetric coverage of the heart, improved contrast, and spatial and temporal resolutions.
Total cost budget: $958,000

NSF CAREER
CAREER: Geometric Techniques for Big Data Medical Imaging 2017-22
The goal of this study is to develop high-dimensional geometric techniques for improving medical imaging, with fast algorithms, enhanced reconstruction and resilience to artifacts.
Total cost budget: $500,000

AFOSR AFRL RTA2.5
Distributed Learning for Dynamic Large-Scale Datasets 2016-17
The goal of this study is to develop distributed machine learning techniques for dynamically evolving datasets.
Total cost budget: $51,000

TEACHING EXPERIENCE

1. EE 5940: Medical Imaging Systems — Spring 2016, University of Minnesota
2. EE 5561: Image Processing and Applications — Fall 2016, University of Minnesota
3. EE 3015: Signals & Systems — Spring 2017, University of Minnesota
4. EE 5531: Probability and Stochastic Processes — Fall 2017, University of Minnesota

PATENTS

1. **M. Akçakaya** and R. Nezafat, "Method for Image Reconstruction using Low-dimensional-structure Self-learning and Thresholding," US Patent #8,699,773.
2. **M. Akçakaya,** J. L. Shaw, S. Roujol and R. Nezafat, "Method and Apparatus For Image Enhancement in Magnetic Resonance Imaging Using Motion Corrupted Data," US Patent #9,202,272.
3. **M. Akçakaya**, P. Gulaka and R. Nezafat, "Image processing apparatus, K-space generation method, magnetic resonance image apparatus, and control method of magnetic resonance image apparatus ," US Patent #9,651,641.
4. **M. Akçakaya,** T. A. Basha, W. J. Manning and R. Nezafat, "Methods and Apparatus for Accurate Measurements of T_2 Relaxation Time in MRI," US Patent Pending.

5. S. Weingärtner, **M. Akçakaya**, W. J. Manning and R. Nezafat, “System and Method for Improved Cardiac Imaging of Subjects with Adverse Cardiac Conditions,” US Patent Pending.
6. S. Weingärtner, **M. Akçakaya** and R. Nezafat, “System and Method for Free-breathing Volumetric Imaging of Cardiac Tissue,” US Patent Pending.
7. S. Weingärtner and **M. Akçakaya**, “System and Method for Reducing Partial Voluming Artifacts in Quantitative Myocardial Tissue Characterization,” US Patent Pending.
8. S. Weingärtner and **M. Akçakaya**, “System and Method for Motion-Robust Mapping of the Transmit Field in Magnetic Resonance Imaging,” US Patent Pending.
9. S. Weingärtner and **M. Akçakaya**, “System and Method for Dynamic, Cardiac Phase-Resolved Quantitaive Longitudinal Relaxation Parameter Mapping,” Provisional US Patent.
10. S. Weingärtner and **M. Akçakaya**, “System and Method for Producing Temporally Resolved Imaged Depicting Late-Gadolinium Enhancement with Magnetic Resonance Imaging,” Provisional US Patent.
11. S. Moeller, X. Wu and **M. Akçakaya**, “Method For Magnetic Resonance Imaging Using Slice Quadratic Phase for Spatiotemporal Encoding,” Provisional US Patent.
12. S. Moeller, S. Chieh and **M. Akçakaya**, “Methods for Reconstructing a Magnetic Resonance Image Using Adaptive Locally Specific Interpolation Functions for Multichannel Magnetic Resonance Imaging Systems,” Provisional US Patent.
13. S. Weingärtner, S. Moeller and **M. Akçakaya**, “Method and Apparatus for Scan Time Reductions in Magnetic Resonance Imaging Using Outer Volume Suppression,” Provisional US Patent.
14. **M. Akçakaya**, “Methods for Kernel-Based Accelerated Magnetic Resonance Imaging Using Machine Learning,” Provisional US Patent.

JOURNAL PUBLICATIONS (Reverse Chronological)

Submitted/Accepted Pending Revision

1. B. Rieger, **M. Akçakaya**, J. C. Pariente, S. Llufriu, E. Martinez-Heras, S. Weingärtner and L. R. Schad, "Time Efficient Whole-Brain Coverage with MR Fingerprinting using Slice-Interleaved Echo-Planar-Imaging," submitted.
2. G. Wang, L. Zhang, G. B. Giannakis, **M. Akçakaya** and J. Chen, "Sparse Phase Retrieval via Truncated Amplitude Flow," submitted.
3. **M. Akçakaya**, “Accelerating MRI using sparse phase retrieval and magnitude-only k-space side information,” submitted.

Published/In press

4. S. Weingärtner, C. Shenoy, B. Rieger, L. R. Schad, J. Schulz-Menger and **M. Akçakaya**, "TempOrally-resolved Parametric Asssessment of Z-magnetization recovery (TOPAZ): Dynamic Myocardial T_1 Mapping using a Cine Steady-State Look-Locker Approach," *Magnetic Resonance in Medicine*, in press.
5. S. Weingärtner, S. Moeller, S. Schmitter, E. Auerbach, P. Kellman, C. Shenoy and **M. Akçakaya**, " Simultaneous Multi-Slice Imaging for Native Myocardial T1 Mapping: Improved Spatial Coverage in a Single Breath-Hold," Magnetic Resonance in Medicine, 78(2), pp. 462-471, Aug. 2017.
6. S. Weingärtner, F. Zimmer, G. J. Metzger, K. Uğurbil, P.-F. van de Moortele and **M. Akçakaya**, “Motion-Robust Cardiac B_1^+ Mapping at 3T using Interleaved Bloch-Siegert Shifts,” *Magnetic Resonance in Medicine*, 78(2), pp. 670-677, Aug. 2017.
7. T. A. Basha, **M. Akçakaya**, C. Liew, C. Taso, F. Delling, S. Berg, K. V. Kissinger, B. Goddu, W. J. Manning and R. Nezafat, “High-Resolution Late Gadolinium Enhancement Imaging with Compressed Sensing: A Single-Center Clinical Study,” *Journal of Magnetic Resonance Imaging*, in press.
8. S. Weingärtner, N. M. Meßner, F. G. Zöllner, **M. Akçakaya** and L. R. Schad, “Black-Blood Native T1 Mapping: Blood Signal Suppression for Reduced Partial-Voluming in the Myocardium,” *Magnetic Resonance in Medicine*, 78(2), pp. 484-493, Aug. 2017.
9. **M. Akçakaya**, S. Weingärtner, T. A. Basha, S. Roujol and R. Nezafat, “Joint Myocardial T_1 and T_2 Mapping Using A Combination of Saturation Recovery and T_2-preparation,” *Magnetic Resonance in Medicine*, 76(3), pp. 888-896, Sept. 2016.
10. **M. Akçakaya** and V. Tarokh, “Sparse Signal Recovery from a Mixture of Linear and Magnitude-Only Measurements,” *IEEE Signal Processing Letters*, 22(9), pp. 1220-1223, Sept. 2015.

11. S. Roujol, T. A. Basha, S. Weingärtner, **M. Akçakaya**, S. J. Berg, W. J. Manning and R. Nezafat, "Impact of Motion Correction on Reproducibility and Spatial Variability of Quantitative Myocardial T_2 Mapping," *Journal of Cardiovascular Magnetic Resonance*, 17:46, 2015.
12. **M. Akçakaya***, T. A. Basha*, S. Weingärtner, S. Roujol, S. Berg and R. Nezafat, "Improved Quantitative Myocardial T_2 Mapping," *Magnetic Resonance in Medicine*, 74(1), pp. 93-105, July 2015. (PMID: 25103908). (*: denotes co-first authorship)
13. T. A. Basha, **M. Akçakaya**, B. Goddu, S. Berg and R. Nezafat, "Accelerated 3D Cine Phase Contrast Imaging using Randomly Undersampled Echo Planar Imaging with Compressed Sensing Reconstruction," *NMR in Biomedicine*, 28(1), pp. 30-39, Jan. 2015 (PMID: 25323208).
14. **M. Akçakaya**, S. Nam, T. A. Basha, K. Kawaji, V. Tarokh and R. Nezafat, "An Augmented Lagrangian Based Compressed Sensing Reconstruction for Non-Cartesian Magnetic Resonance Imaging without Gridding and Regridding at Every Iteration," *PLoS ONE*, 9(9):e107107, Sept. 12, 2014 (PMID: 25215945).
15. S. Weingärtner, **M. Akçakaya**, S. Roujol, T. A. Basha, C. Tschabrunn, S. Berg, E. Anter and R. Nezafat, "Free-breathing Combined 3D Late Gadolinium Enhancement and T1 Mapping for Myocardial Tissue Characterization," *Magnetic Resonance in Medicine*, 74(4), pp. 1032-1041, Oct. 2015. (PMID: 25324205).
16. S. Roujol, M. Foppa, T. A. Basha, **M. Akçakaya**, B. Goddu, S. Berg and R. Nezafat, "Highly Accelerated Free-Breathing ECG-Triggered Contrast-Enhanced Pulmonary Vein MRA," *Journal of Cardiovascular Magnetic Resonance*, 16:91, 2014 (PMID: 25416082).
17. K. Kawaji, M. Foppa, S. Roujol, **M. Akçakaya** and R. Nezafat, "Whole Heart Coronary Imaging with Flexible Acquisition Window and Trigger Delay," *PLoS ONE*, 10(2):e0112020, Feb. 26, 2015.
18. **M. Akçakaya**, S. Weingärtner, S. Roujol and R. Nezafat, "On the Selection of Sampling Points for Myocardial T_1 Mapping," *Magnetic Resonance in Medicine*, 73(5), pp. 1741-1753, May 2015 (PMID: 24800695).
19. S. Weingärtner, S. Roujol, **M. Akçakaya**, T. A. Basha and R. Nezafat, "Free-Breathing Multi-Slice Native Myocardial T_1 Mapping using the Slice-Interleaved T1 (STONE) Sequence," *Magnetic Resonance in Medicine*, 74(1), pp. 115-214, July 2015 (PMID: 25131652).
20. S. Pflugi, S. Roujol, **M. Akçakaya**, K. Kawaji, M. Foppa, B. Heydari, B. Goddu, K. V. Kissinger, S. Berg, W. J. Manning, S. Kozerke and R. Nezafat, "Accelerated Cardiac MR Stress Perfusion with Radial Sampling After Physical Exercise with an MR-compatible Supine Bicycle Ergometer," *Magnetic Resonance in Medicine*, 74(2), pp. 384-395, Aug. 2015 (PMID: 25105469).
21. **M. Akçakaya**, T. A. Basha, S. Pflugi, M. Foppa, K. V. Kissinger, T. H. Hauser and R. Nezafat, "Localized Spatio-Temporal Constraints for CMR Perfusion," *Magnetic Resonance in Medicine*, 72(3), pp. 629-639, Sep 2014 (PMID: 24123058).
22. S. Weingärtner, **M. Akçakaya**, S. Roujol, T. A. Basha, C. Stehning, K. V. Kissinger, B. Goddu, S. Berg, W. J. Manning and R. Nezafat, "Free-Breathing Post-Contrast Three-dimensional T_1 Mapping: Volumetric Assessment of Myocardial T_1 Values," *Magnetic Resonance in Medicine*, 73(1): pp. 214-222, Jan. 2015 (PMID: 24554395).
23. S. Roujol, T. A. Basha, **M. Akçakaya**, M. Foppa, R. H. Chan, K. V. Kissinger, B. Goddu, S. Berg, W. J. Manning, R. Nezafat, "3D Late Gadolinium Enhancement in a Single Prolonged Breath-hold using Supplemental Oxygenation and Hyperventilation," *Magnetic Resonance in Medicine*, 72(3), pp. 850-857, Sep 2014 (PMID: 24186772).
24. **M. Akçakaya**, P. Gulaka, T. A. Basha, L. H. Ngo, W. J. Manning and R. Nezafat, "Free-Breathing Phase Contrast MRI with Near 100% Respiratory Navigator Efficiency using k-space Dependent Respiratory Gating," *Magnetic Resonance in Medicine*, 71(6), pp. 2172-2179, June 2014 (PMID: 23900942).
25. **M. Akçakaya**, T. A. Basha, R. H. Chan, W. J. Manning and R. Nezafat, "Accelerated Isotropic Sub-Millimeter Whole-Heart Coronary MRI: Compressed Sensing versus Parallel Imaging," *Magnetic Resonance in Medicine*, 71(2), pp. 815-822, Feb. 2014 (PMID: 23440946).
26. S. Weingärtner, **M. Akçakaya**, K. V. Kissinger, B. Goddu, S. Berg, W. J. Manning and R. Nezafat, "Combined Saturation/Inversion Recovery Sequences for Improved Evaluation of Scar and Diffuse Fibrosis in Patients with Arrhythmia or Heart Rate Variability," *Magnetic Resonance in Medicine*, 71(3), pp. 1024-1034, March 2014 (PMID: 23650078).
27. S. Nam, S. Hong, **M. Akçakaya**, Y. Kwak, B. Goddu, K. V. Kissinger, W. J. Manning, V. Tarokh, R. Nezafat, "Compressed Sensing Reconstruction for Undersampled Breath-Hold Radial Cine Imaging with

Auxiliary Free-Breathing Data," *Journal of Magnetic Resonance Imaging*, 39(1), pp. 179-188, Jan. 2014 (PMID: 23857797).

28. **M. Akçakaya**, J. L. Shaw, T. H. Hauser and R. Nezafat, "Utility of Respiratory-Navigator-Rejected k-space Lines for Improved Signal-to-Noise Ratio in 3D Cardiac MR," *Magnetic Resonance in Medicine*, vol. 70(5), pp. 1332-1339, November 2013 (PMID: 23233381).
29. Y. Kwak, S. Nam, **M. Akçakaya**, T. A. Basha, B. Goddu, W. J. Manning, V. Tarokh, R. Nezafat, "Accelerated Aortic Flow Assessment with Compressed Sensing With and Without Use of the Sparsity of the Complex Difference Image," *Magnetic Resonance in Medicine*, 70(3), pp. 851-858, Sept. 2013 (PMID: 23065722).
30. S. Nam, **M. Akçakaya**, T. A. Basha, C. Stehning, W. J. Manning, V. Tarokh and R. Nezafat, "Compressed Sensing Reconstruction for Whole Heart Imaging with 3D Radial Trajectories: A GPU Implementation," *Magnetic Resonance in Medicine*, 69(1), pp. 91–102, January 2013 (PMID: 21536523).
31. **M. Akçakaya**, H. Rayatzadeh, T. A. Basha, S. N. Hong, R. H. Chan, K. V. Kissinger, T. H. Hauser, M, E. Josephson, W. J. Manning and R. Nezafat, "Accelerated Late Gadolinium Enhancement Cardiac MRI with Isotropic Spatial Resolution Using Compressed Sensing: Initial Experience," *Radiology*, 264(3):691-699, September 2012 (PMID: 22820734).
32. **M. Akçakaya**, T. A. Basha, R. H. Chan, H. Rayatzadeh, K. V. Kissinger, B. Goddu, L. A. Goepfert, W. J. Manning and R. Nezafat, "Accelerated Contrast-Enhanced Whole Heart Coronary MRI using Low-dimensional-Structure Self-learning and Thresholding (LOST)," *Magnetic Resonance in Medicine*, 67(5), pp. 1434-1443, May 2012 (PMID: 22392654).
33. M. H. Moghari, **M. Akçakaya**, A. O'Connor, T. A. Basha, M. Casanova, L. Goepfert, K. V. Kissinger, B. Goddu, M. L. Chuang, V. Tarokh, W. J. Manning and R. Nezafat, "Compressed-Sensing Motion Compensation (CosMo): A Joint Prospective-Retrospective Respiratory Navigator for Coronary MRI," *Magnetic Resonance in Medicine*, 66(6), pp. 1674-1681, Dec 2011 (PMID: 21671266).
34. **M. Akçakaya**, J. Park and V. Tarokh, "A Coding Theory Approach to Noisy Compressive Sensing Using Low Density Frames," *IEEE Trans. on Signal Processing*, 59(11), pp. 5369-5379, Nov. 2011.
35. **M. Akçakaya**, T. A. Basha, B. Goddu, L. A. Goepfert, K. V. Kissinger, V. Tarokh, W. J. Manning and R. Nezafat, "Low-dimensional-Structure Self-Learning and Thresholding (LOST): Regularization Beyond Compressed Sensing for MRI Reconstruction," *Magnetic Resonance in Medicine*, 66(3), pp. 756-767, Sep 2011, ISMRM I. I. Rabi Young Investigator Award Finalist (PMID: 21465542).
36. **M. Akçakaya**, P. Hu, M. L. Chuang, T. H. Hauser, L. H. Ngo, W. J. Manning, V. Tarokh and R. Nezafat, "Accelerated Non-Contrast Enhanced Pulmonary Vein MRA with Distributed Compressed Sensing," *Journal of Magnetic Resonance Imaging*, 33(5), pp. 1248-1255, May 2011 (PMID: 21509886).
37. **M. Akçakaya**, S. Nam, P. Hu, M. H. Moghari, L. H. Ngo, V. Tarokh, W. J. Manning and R. Nezafat, "Compressed Sensing with Wavelet Domain Dependencies for Coronary MRI," *IEEE Trans. on Medical Imaging*, 30(5), pp.1090-1099, May 2011 (PMID: 21536523).
38. **M. Akçakaya** and V. Tarokh, "Shannon Theoretic Limits on Noisy Compressive Sampling," *IEEE Trans. on Information Theory*, 56(1), pp. 492-504, Jan. 2010.
39. **M. Akçakaya** and V. Tarokh, "A Frame Construction and A Universal Distortion Bound for Sparse Representations," *IEEE Trans. on Signal Processing*, 56(6), pp. 2443-2450, June 2008.
40. **M. Akçakaya** and V. Tarokh, "Performance of Sparse Representation Algorithms Using Randomly Generated Frames," *IEEE Signal Processing Letters*, 14(11), pp. 777-780, Nov. 2007.
41. N. Mysore, J. Bajcsy, **M. Akçakaya** and H. Kobayashi, "A New Performance Evaluation Technique for Iteratively Decoded Magnetic Recording Systems," IEEE Trans. on Magnetics, 41(10), pp. 2986-2988, Oct. 2005.

BOOK CHAPTERS

1. **M. Akçakaya** and R. Nezafat, "Magnetic Resonance Imaging of Coronary Arteries," in *Basic Principles of Cardiovascular MRI*. Syed, Raman & Simonetti (Eds.), p. 245-260, Springer, 2015.
2. **M. Akçakaya**, M. Tang and R. Nezafat, "Physics in Cardiac Magnetic Resonance Imaging Including Parallel Imaging," in *Cardiovascular MRI*. Kwong, Heydari & Jerosch-Herold (Eds.), Springer, in press.

SELECTED CONFERENCE PUBLICATIONS/ABSTRACTS

Conference Papers

1. B. Yaman, S. Weingärtner, N. Kargas, N. Sidiropoulos and **M. Akçakaya**, "Locally Low-Rank Tensor Regularization for High-Resolution Quantitative Dynamic MRI," *Proceedings of the IEEE Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Dec. 2017.
2. S. Moeller, S. Weingärtner and **M. Akçakaya**, "Multi-Scale Locally Low-Rank Noise Reduction for High-Resolution Dynamic Quantitative Cardiac MRI," *Proceedings of the IEEE Engineering in Medicine and Biology Conference (EMBC)*, Jeju Island, Korea, July 2017.
3. G. Wang, L. Zhang, G. B. Giannakis, J. Chen and **M. Akçakaya**, "SPARTA: Sparse Phase Retrieval via Truncated Amplitude Flow," *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, New Orleans, LA, March 2017.
4. **M. Akçakaya**, T. A. Basha, S. Weingärtner and R. Nezafat, "Joint Image Reconstruction and Motion Parameter Estimation for Free-Breathing Navigator-Gated Cardiac MRI," *Proceedings of SPIE International Symposium on Optical Science and Technology, Wavelets and Sparsity XV*, August 2013 (invited).
5. **M. Akçakaya** and V. Tarokh, "Distortion-Based Achievability Conditions for Joint Estimation of Sparse Signals and Measurement Parameters from Undersampled Acquisitions," *Proceedings of the IEEE International Symposium on Information Theory (ISIT)*, Istanbul, Turkey, July 2013.
6. **M. Akçakaya**, J. Park and V. Tarokh, "Low Density Frames for Compressive Sensing," *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Dallas, TX, March 2010.
7. **M. Akçakaya** and V. Tarokh, "Limits on Noisy Compressive Sampling in Linear and Sublinear Regimes," *Proc. Conference on Information Sciences and Systems (CISS)*, Princeton, NJ, March 2008 (invited).
8. **M. Akçakaya** and V. Tarokh, "On Sparsity, Redundancy and Quality of Frame Representations," *Proceedings of the IEEE International Symposium on Information Theory (ISIT)*, Nice, France, June 2007.
9. **M. Akçakaya** and V. Tarokh, "Performance Study of Various Sparse Representation Methods Using Redundant Frames," *Proc. Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2007.
10. N. Mysore, **M. Akçakaya**, J. Bajcsy and H. Kobayashi, "A New Performance Evaluation Technique for Iteratively Decoded Magnetic Recording Systems," *Proceedings of the IEEE International Magnetics Conference*, Nagoya, Japan, April 2005.

Selected Conference Abstracts (> 50 abstracts, only selected first- and last-author abstracts listed)

11. S. Weingärtner, S. Moeller, K. Uğurbil, C. Shenoy and **M. Akçakaya**, "Simultaneous Multi-Slice Imaging For Whole Heart Myocardial T_1 Mapping in a Single Breath-Hold," *Proc. 25th Meeting of ISMRM*, Hawaii, HI, April 2017.
12. S. Weingärtner, S. Moeller, C. Shenoy and **M. Akçakaya**, "10-fold Spatial-Only Acceleration For High-Resolution Myocardial Perfusion Using Multi-Band Imaging and Multi-Band Outer Volume Suppression," *Proc. 25th Meeting of ISMRM*, Hawaii, HI, April 2017.
13. S. Moeller, X. Wu, N. Harel, M. Garwood and **M. Akçakaya**, " SQUASHER: 3D Fourier encoding with frequency swept pulses," *Proc. 25th Meeting of ISMRM*, Hawaii, HI, April 2017.
14. S. Weingärtner, C. Shenoy and **M. Akçakaya**, " Cine T_1 Mapping: B_1 corrected Look-Locker inversion recovery for phase resolved T_1-Mapping at 3T," *Journal of Cardiovascular Magnetic Resonance*, 19 Suppl 1:P172, 2017.
15. S. Weingärtner, G. Metzger, P.-F. van de Moortele and **M. Akçakaya**, "Cardiac Phase-Resolved B_1^+ Mapping at 3T," *Proc. 24th Meeting of ISMRM*, Singapore, Singapore, May 2016.
16. S. Moeller, S. Schmitter and **M. Akçakaya**, "Noise Amplification vs. Resolution Tradeoff in the SLIDER Technique" *Proc. 24th Meeting of ISMRM*, Singapore, Singapore, May 2016.
17. **M. Akçakaya**, T. A. Basha, C. Tsao, S. Berg, K. V. Kissinger, B. Goddu, W. J. Manning and R. Nezafat, "High-Resolution Late Gadolinium Enhancement Imaging with Compressed Sensing: A Single-Center Clinical Study," *Journal of Cardiovascular Magnetic Resonance*, 18 Suppl 1:O56, 2016.
18. **M. Akçakaya**, V. Tarokh and R. Nezafat, "Joint Compressed Sensing and Sparse Phase Retrieval: Reconstruction from a Combination of Complex and Magnitude-only k-space Measurements," *Proc. 23rd Meeting of ISMRM*, Toronto, Canada, May 2015.

19. **M. Akçakaya**, S. Weingärtner, T. A. Basha, S. Roujol and R. Nezafat, "Joint Myocardial T_1 and T_2 Mapping Using a Saturation-Recovery Sequence," *Proc. 23rd Meeting of ISMRM*, Toronto, Canada, May 2015.
20. **M. Akçakaya**, T. A. Basha, W. J. Manning and R. Nezafat, "Efficient Calculation of g-factors for CG-SENSE in High Dimensions: Noise Amplification in Random Undersampling," *Journal of Cardiovascular Magnetic Resonance*, 16 Suppl 1:W28, 2014.
21. **M. Akçakaya**, S. Weingärtner, W. J. Manning and R. Nezafat, "Selection of Sampling Points for Saturation Recovery Based Myocardial T1 Mapping," *J Cardiovascular Magnetic Resonance*, 16 Suppl 1:W32, 2014.
22. **M. Akçakaya**, J. L. Shaw, T. H. Hauser and R. Nezafat, "Improved Signal-To-Noise Ratio in Late Gadolinium Enhancement Imaging by Using Respiratory-Navigator-Rejected K-Space Lines," *Proc. 21st Meeting of ISMRM*, Salt Lake City, USA, May 2013.
23. **M. Akçakaya**, T. A. Basha, R. H. Chan, W. J. Manning and R. Nezafat, "Accelerated Sub-mm Whole-Heart Coronary MRI: Compressed Sensing vs. Parallel Imaging," *Proc. 21st Meeting of ISMRM*, Salt Lake City, USA, May 2013.
24. **M. Akçakaya**, T. A. Basha, M. Foppa, K. V. Kissinger, W. J. Manning and R. Nezafat, "Accelerated Three-Dimensional Free-Breathing First Pass Cardiac Perfusion at 1.5T," *Journal of Cardiovascular Magnetic Resonance*, 15 Suppl 1:P42, 2013.
25. **M. Akçakaya**, P. Gulaka, T. A. Basha, T. H. Hauser, W. J. Manning and R. Nezafat, "Improved Efficiency for Respiratory Motion Compensation in Three-Dimensional Flow Measurements," *Journal of Cardiovascular Magnetic Resonance*, 15 Suppl 1:P30, 2013.
26. **M. Akçakaya**, M. Henningsson, R. Nezafat and R. M. Botnar, "Comparison of Respiratory Navigator Techniques for Interleaved High-Resolution Coronary Vessel Wall Imaging," *Journal of Cardiovascular Magnetic Resonance*, 15 Suppl 1:E20, 2013.
27. **M. Akçakaya**, H. Rayatzadeh, S. N. Hong, T. H. Hauser, R. H. Chan, T. A. Basha, K. V. Kissinger, B. Goddu, W. J. Manning and R. Nezafat, "Improved Late Gadolinium Enhancement Imaging of Left Ventricle with Isotropic Spatial Resolution," *Journal of Cardiovascular Magnetic Resonance*, 14 Suppl 1:O22, 2012. SCMR Early Career Award Finalist (Basic Translational Research)
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29. **M. Akçakaya**, T. A. Basha, B. Goddu, L. Goepfert, K. V. Kissinger, V. Tarokh, W. J. Manning and R. Nezafat, "Low-dimensional-Structure Self-Learning and Thresholding (LOST): Regularization Beyond Compressed Sensing for MRI Reconstruction," *Proc. 19th Meeting of ISMRM*, Montreal, Canada, May 2011.
30. **M. Akçakaya**[*], S. Nam[*], T. A. Basha, V. Tarokh, W. J. Manning and R. Nezafat, "Iterative Compressed Sensing Reconstruction for 3D Non-Cartesian Trajectories without Gridding & Regridding at Every Iteration," *Proc. 19th Meeting of ISMRM*, Montreal, Canada, May 2011 ([*]: denotes co-first authorship).
31. **M. Akçakaya**[*], T. A. Basha[*], K. V. Kissinger, B. Goddu, L. Goepfert, W. J. Manning and R. Nezafat, " Accelerated Contrast-Enhanced Whole Heart Coronary MRI Using Low-dimensional-Structure Self-learning and Thresholding (LOST), an Improved Compressed Sensing Reconstruction," *Proc. 19th Meeting of ISMRM*, Montreal, Canada, May 2011 ([*]: denotes co-first authorship).
32. **M. Akçakaya**, S. Nam, P. Hu, V. Tarokh, W. J. Manning and R. Nezafat, "Compressed Sensing with Transform Domain Dependencies for Coronary MRI," *Proc. 18th Meeting of ISMRM*, Stockholm, Sweden, May 2010.
33. **M. Akçakaya**, P. Hu, V. Tarokh, W. J. Manning and R. Nezafat, "Non-Contrast Enhanced Pulmonary Vein MRA with Compressed Sensing," *Proc. 18th Meeting of ISMRM*, Stockholm, Sweden, May 2010.
34. M. H. Moghari[*], **M. Akçakaya**[*], A. O'Connor, P. Hu, V. Tarokh, W. J. Manning and R. Nezafat, "CoSMo: Compressed Sensing Motion Correction for Coronary MRI," *Proc. 18th Meeting of ISMRM*, Stockholm, Sweden, May 2010 ([*]: denotes co-first authorship).
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PROFESSIONAL SERVICE

Reviewer for the journals *Magnetic Resonance in Medicine; Journal of Magnetic Resonance Imaging; IEEE Transactions on Medical Imaging; NeuroImage; IEEE Transactions on Computational Imaging; IEEE Transactions on Image Processing; Magnetic Resonance Imaging; IEEE Transactions on Signal Processing; IEEE Transactions on Information Theory; PLoS ONE; Scientific Report;, IEEE Signal Processing Letters; IEEE Journal of Selected Topics in Signal Processing; IEEE Journal of Biomedical and Health Informatics; Sensors; BMC Medical Imaging; Digital Signal Processing; Magnetic Resonance Materials in Physics, Biology and Medicine; Journal of Parallel and Distributed Computing; Journal of Communications and Networks*.

Member of IEEE, ISMRM, SCMR and SIAM.

Conference Service:

i. *Special Session Co-Organizer, "Machine Learning in Medical Imaging: From Measurements to Diagnosis"* in IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2018.
ii. *Technical Committee*, IEEE Ubiquitous Computing, Electronics and Mobile Communication Conference (2017), New York, NY
iii. *Session chair,* Learning Image Reconstruction: Will Neural Networks Change Everything?; Annual Meeting of the International Society For Magnetic Resonance in Medicine (2017), Honolulu, HI
iv. *International Program Committee,* IEEE Electro Information Technology (2017), Lincoln, NE
v. *Technical Committee*, IEEE Ubiquitous Computing, Electronics and Mobile Communication Conference (2016), New York, NY
vi. *Session Chair,* Myocardial Tissue Characterization; Annual Meeting of the International Society For Magnetic Resonance in Medicine (2016), Singapore, Singapore
vii. *Session Chair,* Motion Correction: No Brainer; Annual Meeting of the International Society For Magnetic Resonance in Medicine (2016), Singapore, Singapore
viii. *Session Chair,* New Contrast and Methods; Workshop on High and Ultra-High Field Imaging (2015), Minneapolis, MN

OTHER ACTIVITIES

Eureka! Faculty Lecturer: Interactive lecture on *Medical Image Processing* as part of the Eureka! Program, in an outreach effort to 8th and 9th grade girls interested in STEM fields. Eureka! is a partnership between the University of Minnesota College of Science & Engineering and the YWCA of Minneapolis' Girls, Inc. chapter, aimed at middle school girls from under-represented and under-privileged backgrounds, who are interested in pursuing STEM careers.

PERSONAL

Citizenship:	Turkey (Permanent Resident of the USA)
Languages:	Fluent in English, Turkish; Intermediate in French, Spanish
Interests:	Rowing (Harvard Graduate School team captain, CRI member, Harvard Law School member), member of Harvard University Cycling Association, classical guitar