

Justin P. Haldar, Ph.D.

University of Southern California
University Park Campus
3740 McClintock Avenue
Hughes Aircraft Electrical Engineering Center (EEB) #442
Los Angeles, CA 90089

jhaldar@usc.edu
<https://mr.usc.edu/>
Office Phone: (213)740-2358

ACADEMIC POSITIONS

- **Associate Professor**, Signal and Image Processing Institute, Ming Hsieh Department of Electrical and Computer Engineering, University of Southern California. April 2018–Present.
- **Associate Professor (Courtesy Appointment)**, Department of Biomedical Engineering, University of Southern California. April 2018–Present.
- **Assistant Professor**, Signal and Image Processing Institute, Ming Hsieh Department of Electrical Engineering, University of Southern California. August 2012–April 2018.
- **Assistant Professor (Courtesy Appointment)**, Department of Biomedical Engineering, University of Southern California. January 2014–April 2018.
- **Research Assistant Professor**, Signal and Image Processing Institute, Dana & David Dornsife Cognitive Neuroscience Imaging Center, Brain and Creativity Institute, Ming Hsieh Department of Electrical Engineering, University of Southern California. January 2012–August 2012.
- **Postdoctoral Research Associate**, Signal and Image Processing Institute, Dana & David Dornsife Cognitive Neuroscience Imaging Center, Brain and Creativity Institute, Ming Hsieh Department of Electrical Engineering, University of Southern California. July 2011–December 2011.
- **Graduate Research Assistant/Fellow**, Beckman Institute for Advanced Science and Technology, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. Advisor: Professor Zhi-Pei Liang. January 2004–May 2011.

EDUCATION

- **Doctor of Philosophy in Electrical and Computer Engineering**, May 2011, University of Illinois at Urbana-Champaign. Dissertation: “Constrained Imaging: Denoising and Sparse Sampling.”
- **Master of Science in Electrical Engineering**, August 2005, University of Illinois at Urbana-Champaign. Thesis: “Sparse Matrix Formulations for Fast Image Reconstruction in Multichannel MRI.”
- **Bachelor of Science in Electrical Engineering (Highest Honors)**, May 2004, University of Illinois at Urbana-Champaign. Minors in Computer Science and Mathematics.

RESEARCH AWARDS AND HONORS – 2005-PRESENT

(Abbreviations: IEEE ISBI – IEEE International Symposium on Biomedical Imaging; IEEE EMBC – IEEE Engineering in Medicine and Biology Conference; ISMRM – International Society for Magnetic Resonance in Medicine; IEEE MIC – IEEE Medical Imaging Conference; AAPM – American Association of Physicists in Medicine)

Faculty Career Development:

- **National Science Foundation CAREER Award**, 2014.

Journal and Conference Paper Awards and Distinctions:

- **Magnetic Resonance in Medicine Editor’s Pick (senior author)**, July 2021. For the paper: “Region-Optimized Virtual (ROVir) Coils: Localization and/or Suppression of Spatial Regions using Sensor-Domain Beamforming.”
- **Magnetic Resonance in Medicine Editor’s Pick (first author)**, August 2020. For the paper: “Fast Submillimeter Diffusion MRI using gSlider-SMS and SNR-Enhancing Joint Reconstruction.”
- **Best Student Paper Award Finalist (senior author)**, IEEE ISBI 2020. For the paper: “Autoregression and structured low-rank modeling of sinograms.”

- **Top Downloaded Paper 2018-2019 (co-author)**, Magnetic Resonance in Medicine. For the paper: “Improving Parallel Imaging by Jointly Reconstructing Multi-Contrast Data.”
- **Top Downloaded Paper 2018-2019 (co-author)**, Magnetic Resonance in Medicine. For the paper: “Impact of (k,t) sampling on DCE MRI tracer kinetic parameter estimation in digital reference objects.”
- **Magnetic Resonance in Medicine Editor’s Pick (co-author)**, August 2018. For the paper: “Improving parallel imaging by jointly reconstructing multi-contrast data.”
<https://blog.ismrm.org/2018/08/31/qa-with-berkin-bilgic-and-kawin-setsompop/>
<https://www.youtube.com/watch?v=UiIUZgp0FCk>
- **First-Place Student Paper Award (co-author)**, IEEE MIC 2012. For the paper: “Kinetic Parameter Estimation in Dynamic PET with a Sparsity-Regularized Mixture Model.”
- **Best Student Paper Award (first author)**, IEEE ISBI 2010. For the paper: “Spatiotemporal Imaging With Partially Separable Functions: A Matrix Recovery Approach.”
- **Student Paper Competition First-Place Award (first author)**, IEEE EMBC 2010. For the paper: “Label-Free High-Resolution Imaging of Live Cells with Deconvolved Spatial Light Interference Microscopy.”
- **I. I. Rabi Young Investigator Award (co-author)**, ISMRM 2009. For the paper: “Robust Water/Fat Separation in the Presence of Large Field Inhomogeneities Using a Graph Cut Algorithm.”
- **Student Paper Competition Geographic Finalist: North America (co-author)**, IEEE EMBC 2008. For the paper: “A Network Flow Method for Improved MR Field Map Estimation in the Presence of Water and Fat.”
- **Student Paper Competition Geographic Finalist: North America (first author)**, IEEE EMBC 2007. For the paper: “High-Resolution Diffusion MRI.”

Conference Abstract Awards and Distinctions:

- **Best in Physics Award (co-author)**, AAPM 2022. For the abstract “Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) in In-Vivo Body: Feasibility Study on Liver and Prostate.”
- **Summa Cum Laude Merit Award (co-author)**, ISMRM 2022. For the abstract: “Mesoscale myelin-water fraction and T1/T2/PD mapping through optimized 3D ViSTa-MRF and stochastic reconstruction with preconditioning.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2022. For the abstract: “Estimating multicomponent 2D relaxation spectra with a ViSTa-MR fingerprinting acquisition.”
- **Summa Cum Laude Merit Award (senior author)**, ISMRM 2021. For the abstract: “Region-Optimized Virtual (ROVir) coils: Application of sensor-domain beamforming for localizing and/or suppressing spatial regions.”
- **Summa Cum Laude Merit Award (co-author)**, ISMRM 2021. For the abstract: “Rapid fetal HASTE imaging using variable flip angles and simultaneous multislice wave-LORAKS.”
- **Magna Cum Laude Merit Award (co-senior author)**, ISMRM 2021. For the abstract: “Feasibility of single breath-hold CINE with combined simultaneous multi-slice (SMS) and region-optimized virtual (ROVir) coils.”
- **Magna Cum Laude Merit Award (co-author)**, ISMRM 2021. For the abstract: “Robust multi-shot EPI with untrained artificial neural networks: Unsupervised scan-specific deep learning for blip up-down acquisition (BUDA).”
- **Summa Cum Laude Merit Award (co-author)**, ISMRM 2020. For the abstract: “Diffusion-PEPTIDE: rapid distortion-free diffusion-relaxometry imaging.”
- **Featured Power Pitch Presentation (senior author)**, ISMRM 2020. For the abstract: “Local perturbation responses: A tool for understanding the characteristics of advanced nonlinear MR reconstruction algorithms.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2019. For the abstract: “Learning-Based Jointly-Optimal Design of the Diffusion Encoding Scheme and Orientation Estimation Method for Diffusion MRI.”
- **Science & Education Highlight (senior author)**, ISMRM 2018 (32 highlights were selected from 5,651 abstracts). For the abstract “Multidimensional T1 Relaxation-T2 Relaxation Correlation Spectroscopic Imaging (RR-CSI) for In Vivo Imaging of Microstructure.”
<https://blog.ismrm.org/daily/#1529400674763-6777e1c8-3aba>
- **Featured Power Pitch Presentation (co-author)**, ISMRM 2018 (hand-selected as one of the most interesting 330 abstracts out of 5,651 accepted). For the abstract: “Influence of whole-brain DCE-MRI (k,t) sampling strategies on variance of pharmacokinetic parameter estimates.”
- **Summa Cum Laude Merit Award (senior author)**, ISMRM 2018. For the abstract: “Multidimensional T1 Relaxation-T2 Relaxation Correlation Spectroscopic Imaging (RR-CSI) for In Vivo Imaging of Microstructure.”

- **Magna Cum Laude Merit Award (co-author)**, ISMRM 2018. For the abstract: “Optimal experiment design for magnetic resonance fingerprinting: New insights and further improvements.”
- **Featured Power Pitch Presentation (senior author)**, ISMRM 2017 (hand-selected as one of the most interesting 220 abstracts out of 6,780 submissions to the conference). For the abstract: “Navigator-free EPI ghost correction using low-rank matrix modeling: Theoretical insights and practical improvements.”
- **1st Place Award for Best Abstract Presentation from the ISMRM Quantitative MR Study Group (senior author)**, ISMRM 2017. For the abstract: “Phantom Validation of Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI).”
- **Summa Cum Laude Merit Award (senior author)**, ISMRM 2017. For the abstract: “Navigator-free EPI ghost correction using low-rank matrix modeling: Theoretical insights and practical improvements.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2017. For the abstract: “Faster Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) using Optimized Experiment Design.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2017. For the abstract: “Wave-LORAKS for faster Wave-CAIPI MRI.”
- **Featured Power Pitch Presentation (first author)**, ISMRM 2016 (hand-selected as one of the most interesting 165 abstracts out of 5,915 submissions to the conference). For the abstract: “Whole-brain quantitative diffusion MRI at 660 μm resolution in 25 minutes using gSlider-SMS and SNR-enhancing joint reconstruction.”
- **Top Ten Most Popular Abstract (senior author)**, ISMRM 2016 (one of the most accessed abstracts out of 5,915 submissions). For the abstract: “Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI): An Enhanced Approach to Imaging Microstructure.” <http://www.ismr.org/2016-annual-meeting-exhibition/most-popular-sessions-abstracts-of-the-2016-meeting/>
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2016. For the abstract: “SENSE-LORAKS: Phase-Constrained Parallel MRI without Phase Calibration.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2015. For the abstract: “Simultaneous Multi-slice MRI Reconstruction using LORAKS.”
- **Featured PowerPoster Presentation (first author)**, ISMRM 2014 (hand-selected as one of the most interesting 150 abstracts out of 6,481 submissions to the conference). For the abstract: “LORAKS: Low-Rank Modeling of Local k-Space Neighborhoods.”
- **Featured PowerPoster Presentation (senior author)**, ISMRM 2014 (hand-selected as one of the most interesting 150 abstracts out of 6,481 submissions to the conference). For the abstract: “A Novel Approach for Statistical Estimation of HARDI Diffusion Parameters from Rician and Non-Central Chi Magnitude Images.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2014. For the abstract: “P-LORAKS: Low-rank modeling of local k-space neighborhoods with parallel imaging data.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2014. For the abstract: “A Novel Approach for Statistical Estimation of HARDI Diffusion Parameters from Rician and Non-Central Chi Magnitude Images.”
- **Magna Cum Laude Merit Award (senior author)**, ISMRM 2013. For the abstract: “Accelerating Data Acquisition for Reversed-Gradient Distortion Correction in Diffusion MRI: A Constrained Reconstruction Approach.”

Graduate School Awards, Fellowships, and Travel Grants:

- **M. E. Van Valkenburg Graduate Research Award**, Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, 2011.
- **Beckman Institute Graduate Fellowship**, University of Illinois at Urbana-Champaign, Fall 2008-Spring 2009.
- **University of Illinois Fellowship**, University of Illinois at Urbana-Champaign, Fall 2008-Spring 2009.
- **National Science Foundation Graduate Research Fellowship**, Summer 2005-Spring 2008.
- **Electrical and Computer Engineering Distinguished Fellowship**, University of Illinois at Urbana-Champaign, Spring 2004-Fall 2005, Fall 2009.
- **Student Travel Grant**, IEEE ISBI, 2007 and 2008.
- **Educational Stipend**, ISMRM, 2005, 2006, and 2007.
- **Graduate College conference travel grant**, University of Illinois at Urbana-Champaign, 2007, 2010.

PERSONAL LINKS

- Homepage: <https://mr.usc.edu/>
- Google Scholar: <https://scholar.google.com/citations?user=da7qKIEAAAAJ>
- IMDB: <https://www.imdb.com/name/nm12419471/>

REFEREED JOURNAL PUBLICATIONS

(Senior author is underlined; authors who were graduate students at the time the work was performed are marked with a * if I was their principal research advisor, with a * if I was a coadvisor of their work, and are otherwise marked with a †. Undergraduate authors who worked under my supervision are marked with a ♣, and postdoctoral research associates who worked under my supervision are marked with a ●.)

- J54. G. Ramos-Llorden, R. A. Lobos*, T. H. Kim, Q. Tian, T. Witzel, H.-H. Lee, A. Scholz, B. Keil, A. Yendiki, B. Bilgic, **J. P. Haldar**, S. Y. Huang. “High-fidelity, high-spatial-resolution diffusion MRI of the ex vivo whole human brain at ultra-high gradient strength with structured low-rank EPI ghost correction.” *NMR in Biomedicine* 36:e4831, 2023.
<https://doi.org/10.1002/nbm.4831>
- J53. A. A. Joshi, S. Choi†, M. Chong†, G. Sonkar, J. Gonzalez-Martinez, D. Nair, J. L. Wisnowski, **J. P. Haldar**, D. W. Shattuck, H. Damasio, R. M. Leahy. “A Hybrid High-Resolution Anatomical MRI Atlas with Sub-parcellation of Cortical Gyri using Resting fMRI.” *Journal of Neuroscience Methods* 374:109566, 2022.
<https://doi.org/10.1016/j.jneumeth.2022.109566>
- J52. R. A. Lobos*, **J. P. Haldar**. “On the Shape of Convolution Kernels in MRI Reconstruction: Rectangles versus Ellipsoids.” *Magnetic Resonance in Medicine* 87:2989–2996, 2022.
<https://doi.org/10.1002/mrm.29189>
- J51. T. H. Kim*, **J. P. Haldar**. “Efficient Iterative Solutions to Complex-Valued Nonlinear Least-Squares Problems with Mixed Linear and Antilinear Operators.” *Optimization and Engineering* 23:749-768, 2022.
<https://doi.org/10.1007/s11081-021-09604-4>
- J50. R. A. Lobos*, M. U. Ghani, W. C. Karl, R. M. Leahy, **J. P. Haldar**. “Autoregression and Structured Low-Rank Modeling of Sinogram Neighborhoods.” *IEEE Transactions on Computational Imaging* 7:1044–1054, 2021.
<https://doi.org/10.1109/TCI.2021.3114994>
- J49. P. J. Sator, M. Palombo, K. Miller, C.-F. Westin, F. Laun, D. Kim*, **J. P. Haldar**, D. Benjamini, G. Lemberskiy, J. P. de Almeida Martins, J. Hutter. “Combined Diffusion-Relaxometry Microstructure Imaging: Current Status and Future Prospects.” *Magnetic Resonance in Medicine* 86:2987–3011, 2021.
<https://doi.org/10.1002/mrm.28963>
- J48. B. Kim, N. Schweighofer, **J. P. Haldar**, R. M. Leahy, C. J. Winstein. “Corticospinal tract microstructure predicts distal arm motor improvements in chronic stroke.” *Journal of Neurologic Physical Therapy* 45:273–281, 2021.
<https://doi.org/10.1097/NPT.0000000000000363>
- J47. Y. Liu*, **J. P. Haldar**. “PALMNUT: An Enhanced Proximal Alternating Linearized Minimization Algorithm with Application to Separate Regularization of Magnitude and Phase.” *IEEE Transactions on Computational Imaging* 7:518–530, 2021.
<https://doi.org/10.1109/TCI.2021.3077806>
- J46. C.-C. Chan*, **J. P. Haldar**. “Local Perturbation Responses and Checkerboard Tests: Characterization tools for nonlinear MRI methods.” *Magnetic Resonance in Medicine* 86:1873–1887, 2021.
<https://doi.org/10.1002/mrm.28828>
- J45. D. Kim*, S. F. Cauley, K. S. Nayak, R. M. Leahy, **J. P. Haldar**. “Region-Optimized Virtual (ROVir) Coils: Localization and/or Suppression of Spatial Regions using Sensor-Domain Beamforming.” *Magnetic Resonance in Medicine* 86:197–212, 2021.
[Editor’s Pick, July 2021.](#)
<https://doi.org/10.1002/mrm.28706>
- J44. R. A. Lobos*, W. S. Hoge, A. Javed†, C. Liao†, K. Setsompop, K. S. Nayak, **J. P. Haldar**. “Robust autocalibrated structured low-rank EPI ghost correction.” *Magnetic Resonance in Medicine* 85:3403–3419, 2021.
<https://doi.org/10.1002/mrm.28638>
- J43. **J. P. Haldar**, Y. Liu*, C. Liao†, Q. Fan, K. Setsompop. “Fast Submillimeter Diffusion MRI using gSlider-SMS and SNR-Enhancing Joint Reconstruction.” *Magnetic Resonance in Medicine* 84:762–776, 2020.
[Editor’s Pick, August 2020.](#)
<https://doi.org/10.1002/mrm.28172>

- J42. D. Kim*, J. L. Wisnowski, C. T. Nguyen, **J. P. Haldar**. “Multidimensional Correlation Spectroscopic Imaging of Exponential Decays: From Theoretical Principles to In Vivo Human Applications.” *NMR in Biomedicine* 33:e4244, 2020. [Special Issue on “Inverse Problems in Biomedical Magnetic Resonance.”](https://doi.org/10.1002/nbm.4244)
<https://doi.org/10.1002/nbm.4244>
- J41. **J. P. Haldar**, K. Setsompop. “Linear Predictability in Magnetic Resonance Imaging Reconstruction: Leveraging Shift-Invariant Fourier Structure for Faster and Better Imaging.” *IEEE Signal Processing Magazine* 37:69–82, 2020. [Special Issue on on “Computational MRI: Compressed Sensing and Beyond.”](https://doi.org/10.1109/MSP.2019.2949570)
<https://doi.org/10.1109/MSP.2019.2949570>
- J40. Y. Bliesener[†], S. G. Lingala, **J. P. Haldar**, K. S. Nayak. “Impact of (k,t) sampling on DCE MRI tracer kinetic parameter estimation in digital reference objects.” *Magnetic Resonance in Medicine* 83:1625–1639, 2020. [Top Downloaded Paper 2018-2019.](https://doi.org/10.1002/mrm.28024)
<https://doi.org/10.1002/mrm.28024>
- J39. **J. P. Haldar**, D. Kim*. “OEDIPUS: An Experiment Design Framework for Sparsity-Constrained MRI.” *IEEE Transactions on Medical Imaging* 38:1545–1558, 2019.
<https://doi.org/10.1109/TMI.2019.2896180>
- J38. T. H. Kim*, B. Bilgic, D. Polak, K. Setsompop, **J. P. Haldar**. “Wave-LORAKS: Combining Wave Encoding with Structured Low-Rank Matrix Modeling for More Highly Accelerated 3D Imaging.” *Magnetic Resonance in Medicine* 81:1620–1633, 2019.
<https://doi.org/10.1002/mrm.27511>
- J37. B. Zhao, **J. P. Haldar**, C. Liao[†], D. Ma, M. A. Griswold, K. Setsompop, L. L. Wald. “Optimal Experiment Design for Magnetic Resonance Fingerprinting: Cramer-Rao Bound Meets Spin Dynamics.” *IEEE Transactions on Medical Imaging* 38:844–861, 2019.
<https://doi.org/10.1109/TMI.2018.2873704>
- J36. J. Li[†], **J. P. Haldar**, J. C. Mosher, D. R. Nair, J. A. Gonzalez-Martinez, R. M. Leahy. “Scalable and Robust Tensor Decomposition of Spontaneous Stereotactic EEG Data.” *IEEE Transactions on Biomedical Engineering* 66:1549–1558, 2019.
<https://doi.org/10.1109/TBME.2018.2875467>
- J35. B. Kim[†], B. E. Fisher, N. Schweighofer, R. M. Leahy, **J. P. Haldar**, S. Choi[†], D. B. Kay[†], J. Gordon, C. J. Winstein. “A Comparison of Seven Different DTI-derived Estimates of Corticospinal Tract Structural Characteristics in Chronic Stroke Survivors.” *Journal of Neuroscience Methods* 304:66–75, 2018.
<https://doi.org/10.1016/j.jneumeth.2018.04.010>
- J34. R. A. Lobos*, T. H. Kim*, W. S. Hoge, **J. P. Haldar**. “Navigator-free EPI ghost correction with structured low-rank matrix models: New Theory and Methods.” *IEEE Transactions on Medical Imaging* 37:2390–2402, 2018.
<https://doi.org/10.1109/TMI.2018.2822053>
- J33. B. Bilgic, T. H. Kim*, C. Liao[†], M. K. Manhard, L. L. Wald, **J. P. Haldar**, K. Setsompop. “Improving Parallel Imaging by Jointly Reconstructing Multi-Contrast Data.” *Magnetic Resonance in Medicine* 80:619–632, 2018. [Editor’s Pick, August 2018.](https://doi.org/10.1002/mrm.27076)
[Top Downloaded Paper 2018-2019.](https://doi.org/10.1002/mrm.27076)
<https://doi.org/10.1002/mrm.27076>
- J32. A. Habibi, A. Damasio, B. Ilari, R. Veiga, A. A. Joshi, R. M. Leahy, **J. P. Haldar**, D. Varadarajan*, C. Bhushan*, H. Damasio. “Childhood Music Training Induces Change in Micro and Macroscopic Brain Structure: Results from a Longitudinal Study.” *Cerebral Cortex* 28:4336–4347, 2018.
<https://doi.org/10.1093/cercor/bhx286>
- J31. D. Varadarajan*, **J. P. Haldar**. “A Theoretical Signal Processing Framework for Linear Diffusion MRI: Implications for Parameter Estimation and Experiment Design.” *NeuroImage* 161:206–218, 2017.
<https://doi.org/10.1016/j.neuroimage.2017.08.048>
- J30. M. Chong*, C. Bhushan*, A. A. Joshi, S. Y. Choi[†], **J. P. Haldar**, D. W. Shattuck, R. N. Spreng, R. M. Leahy. “Individual Parcellation of Resting fMRI with a Group Functional Connectivity Prior.” *NeuroImage* 156:87–100, 2017.
<https://doi.org/10.1016/j.neuroimage.2017.04.054>
- J29. D. Kim*, E. K. Doyle[†], J. L. Wisnowski, J. H. Kim, **J. P. Haldar**. “Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI): A Multidimensional Approach for Probing Microstructure.” *Magnetic Resonance in Medicine* 78:2236–2249, 2017.
<http://dx.doi.org/10.1002/mrm.26629>

- J28. T. H. Kim*, K. Setsompop, **J. P. Haldar**. “LORAKS Makes Better SENSE: Phase-Constrained Partial Fourier SENSE Reconstruction without Phase Calibration.” *Magnetic Resonance in Medicine* 77:1021–1035, 2017.
<http://dx.doi.org/10.1002/mrm.26182>
- J27. C. Bhushan*, M. Chong*, S. Choi†, A. A. Joshi, **J. P. Haldar**, H. Damasio, R. M. Leahy. “Temporal Non-Local Means Filtering Reveals Real-Time Whole-Brain Cortical Interactions in Resting fMRI.” *PLOS ONE* 11:e0158504, 2016.
<http://dx.doi.org/10.1371/journal.pone.0158504>
- J26. D. Kim*, **J. P. Haldar**. “Greedy Algorithms for Nonnegativity-Constrained Simultaneous Sparse Recovery.” *Signal Processing* 125:274–289, 2016.
<http://dx.doi.org/10.1016/j.sigpro.2016.01.021>
- J25. **J. P. Haldar**, J. Zhuo*. “P-LORAKS: Low-Rank Modeling of Local k-Space Neighborhoods with Parallel Imaging Data.” *Magnetic Resonance in Medicine* 75:1499–1514, 2016.
<http://dx.doi.org/10.1002/mrm.25717>
- J24. J. H. Kim, S.-K. Song, **J. P. Haldar**. “SNR-Enhancing Joint Reconstruction for Improved Diffusion Imaging of Mouse Spinal Cord White Matter Injury.” *Magnetic Resonance in Medicine* 75:852–858, 2016.
<http://dx.doi.org/10.1002/mrm.25691>
- J23. D. Varadarajan*, **J. P. Haldar**. “A Majorize-Minimize Framework for Rician and Non-Central Chi MR Images.” *IEEE Transactions on Medical Imaging* 34:2191–2202, 2015.
<http://dx.doi.org/10.1109/TMI.2015.2427157>
- J22. C. Bhushan*, **J. P. Haldar**, S. Choi, A. A. Joshi, D. W. Shattuck, R. M. Leahy. “Co-registration and distortion correction of diffusion and anatomical images based on inverse contrast normalization.” *NeuroImage* 115:269–280, 2015.
<http://dx.doi.org/10.1016/j.neuroimage.2015.03.050>
- J21. A. Habibi, B. Ilari, K. Crimi†, M. Metke, J. T. Kaplan, A. A. Joshi, R. M. Leahy, D. W. Shattuck, S. Y. Choi, **J. Haldar**, B. Fickel†, A. Damasio, H. Damasio. “An equal start: Absence of cognitive and neural markers for musical aptitude prior to training in children.” *Frontiers in Human Neuroscience* 8:690, 2014.
<http://dx.doi.org/10.3389/fnhum.2014.00690>
- J20. **J. P. Haldar**. “Low-Rank Modeling of Local k-Space Neighborhoods (LORAKS) for Constrained MRI.” *IEEE Transactions on Medical Imaging* 33:668–681, 2014.
<http://dx.doi.org/10.1109/TMI.2013.2293974>
- J19. C. Bhushan*, A. A. Joshi, R. M. Leahy, **J. P. Haldar**. “Improved B₀-distortion correction in diffusion MRI using interlaced q-space sampling and constrained reconstruction.” *Magnetic Resonance in Medicine* 72:1218–1232, 2014.
<http://dx.doi.org/10.1002/mrm.25026>
- J18. Y. Lin*, **J. P. Haldar**, Q. Li, P. Conti, R. M. Leahy. “Constrained Mixture Modeling for the Estimation of Kinetic Parameters in Dynamic PET.” *IEEE Transactions on Medical Imaging* 33:173–185, 2014.
<http://dx.doi.org/10.1109/TMI.2013.2283229>
- J17. F. Lam†, S. D. Babacan, **J. P. Haldar**, M. W. Weiner, N. Schuff, Z.-P. Liang. “Denoising Diffusion-Weighted Magnitude MR Images using Rank and Edge Constraints.” *Magnetic Resonance in Medicine* 71:1272–1284, 2014.
<http://dx.doi.org/10.1002/mrm.24728>
- J16. S. Ashrafulla*, **J. P. Haldar**, A. A. Joshi, R. M. Leahy. “Canonical Granger Causality Between Regions of Interest.” *NeuroImage* 83:189–199, 2013.
<http://dx.doi.org/10.1016/j.neuroimage.2013.06.056>
- J15. **J. P. Haldar**, R. M. Leahy. “Linear Transforms for Fourier Data on the Sphere: Application to High Angular Resolution Diffusion MRI of the Brain.” *NeuroImage* 71:233–247, 2013.
<http://dx.doi.org/10.1016/j.neuroimage.2013.01.022>
- J14. J. Gai, N. Obeid†, J. L. Holtrop†, X.-L. Wu†, F. Lam†, M. Fu†, **J. P. Haldar**, W.-m. W. Hwu, Z.-P. Liang, B. P. Sutton. “More IMPATIENT: A Gridding-Accelerated Toeplitz-Based Strategy for Non-Cartesian High-Resolution 3D MRI on GPUs.” *Journal of Parallel and Distributed Computing* 73:686–697, 2013.
<http://dx.doi.org/10.1016/j.jpdc.2013.01.001>
- J13. **J. P. Haldar**†, V. J. Wedeen, M. Nezamzadeh, G. Dai, M. W. Weiner, N. Schuff, Z.-P. Liang. “Improved Diffusion Imaging through SNR-Enhancing Joint Reconstruction.” *Magnetic Resonance in Medicine* 69:277–289, 2013.
<http://dx.doi.org/10.1002/mrm.24229>
- J12. B. Zhao†, **J. P. Haldar**†, A. G. Christodoulou†, Z.-P. Liang. “Image Reconstruction from Highly Undersampled (k, t)-Space Data with Joint Partial Separability and Sparsity Constraints.” *IEEE Transactions on Medical Imaging* 31:1809–1820, 2012.
<http://dx.doi.org/10.1109/TMI.2012.2203921>

- J11. Y. Wang, Q. Wang[†], **J. P. Haldar**[†], F.-C. Yeh[†], M. Xie, P. Sun, K. Trinkaus, R. S. Klein, A. H. Cross, S.-K. Song. “Quantification of increased cellularity during inflammatory demyelination.” *Brain* 134:3587–3598, 2011.
<http://dx.doi.org/10.1093/brain/awr307>
- J10. **J. P. Haldar**[†], Z. Wang[†], G. Popescu, Z.-P. Liang. “Deconvolved Spatial Light Interference Microscopy for Live Cell Imaging.” *IEEE Transactions on Biomedical Engineering* 58:2489–2497, 2011.
<http://dx.doi.org/10.1109/TBME.2011.2158003>
- J9. D. Hernando[†], D. C. Karampinos[†], K. F. King, **J. P. Haldar**[†], S. Majumdar, J. G. Georgiadis, Z.-P. Liang. “Removal of Olefinic Fat Chemical Shift Artifact in Diffusion MRI.” *Magnetic Resonance in Medicine* 65:692–701, 2011.
<http://dx.doi.org/10.1002/mrm.22670>
- J8. **J. P. Haldar**[†], D. Hernando[†], Z.-P. Liang. “Compressed-Sensing MRI with Random Encoding.” *IEEE Transactions on Medical Imaging* 30:893–903, 2011.
<http://dx.doi.org/10.1109/TMI.2010.2085084>
- J7. R. John, R. Rezaeipoor, S. G. Adie, E. J. Chaney, A. L. Oldenburg, M. Marjanovic, **J. P. Haldar**[†], B. Sutton, S. A. Boppert. “In vivo magnetomotive optical molecular imaging using targeted magnetic nanoprobe.” *Proceedings of the National Academy of Sciences of the United States of America* 107:8085–8090, 2010.
<http://dx.doi.org/10.1073/pnas.0913679107>
- J6. D. Hernando[†], P. Kellman, **J. P. Haldar**[†], Z.-P. Liang. “Robust water/fat separation in the presence of large field inhomogeneities using a graph cut algorithm.” *Magnetic Resonance in Medicine* 63:79–90, 2010.
Recipient of the 2009 ISMRM I. I. Rabi Young Investigator Award.
<http://dx.doi.org/10.1002/mrm.22177>
- J5. **J. P. Haldar**[†], D. Hernando[†]. “Rank-Constrained Solutions to Linear Matrix Equations using PowerFactorization.” *IEEE Signal Processing Letters* 16:584–587, 2009.
<http://dx.doi.org/10.1109/LSP.2009.2018223>
- J4. J. H. Kim, **J. Haldar**[†], Z.-P. Liang, S.-K. Song. “Diffusion Tensor Imaging of Mouse Brain Stem and Cervical Spinal Cord.” *Journal of Neuroscience Methods* 176:186–191, 2009.
<http://dx.doi.org/10.1016/j.jneumeth.2008.09.005>
- J3. S. S. Stone[†], **J. P. Haldar**[†], S. C. Tsao[†], W.-m. W. Hwu, B. P. Sutton, Z.-P. Liang. “Accelerating Advanced MRI Reconstructions on GPUs.” *Journal of Parallel and Distributed Computing* 68:1307–1318, 2008.
<http://dx.doi.org/10.1016/j.jpdc.2008.05.013>
- J2. **J. P. Haldar**[†], D. Hernando[†], S.-K. Song, Z.-P. Liang. “Anatomically Constrained Reconstruction from Noisy Data.” *Magnetic Resonance in Medicine* 59:810–818, 2008.
<http://dx.doi.org/10.1002/mrm.21536>
- J1. D. Hernando[†], **J. P. Haldar**[†], B. P. Sutton, J. Ma, P. Kellman, Z.-P. Liang. “Joint estimation of water/fat images and field inhomogeneity map.” *Magnetic Resonance in Medicine* 59:571–580, 2008.
<http://dx.doi.org/10.1002/mrm.21522>

TECHNICAL REPORTS AND PREPRINTS (UNREFEREED)

(Senior author is underlined; authors who were graduate students at the time the work was performed are marked with a * if I was their principal research advisor, with a * if I was a coadvisor of their work, and are otherwise marked with a †. Undergraduate authors who worked under my supervision are marked with a ♣, and postdoctoral research associates who worked under my supervision are marked with a ●.)

- **J. P. Haldar**. “A Technical Primer on the Physical Modeling of Diffusion-Encoded Magnetic Resonance Experiments: A Random Process Perspective.” University of Southern California, Los Angeles, CA, Technical Report USC-SIPI-453, August 2021.
<http://sipi.usc.edu/reports/abstracts.php?rid=sipi-453>
- T. H. Kim*, P. Garg[♣], **J. P. Haldar**. “LORAKI: Autocalibrated Recurrent Neural Networks for Autoregressive MRI Reconstruction in k-Space.” 2019.
<https://arxiv.org/abs/1904.09390>
- R. Xu, M. Soltanolkotabi, **J. P. Haldar**, W. Unglaub, J. Zusman, A. F. J. Levi, R. M. Leahy. “Accelerated Wirtinger Flow: A new fast algorithm for phase retrieval.” 2018.
<https://arxiv.org/abs/1806.05546>
- T. H. Kim*, **J. P. Haldar**. “LORAKS Software Version 2.0: Faster Implementation and Enhanced Capabilities.” University of Southern California, Los Angeles, CA, Technical Report USC-SIPI-443, May 2018.
<http://sipi.usc.edu/reports/abstracts.php?rid=sipi-443>

- **J. P. Haldar**. “Low-Rank Modeling of Local k-Space Neighborhoods (LORAKS): Implementation and Examples for Reproducible Research.” University of Southern California, Los Angeles, CA, Technical Report USC-SIPI-414, April 2014.
<http://sipi.usc.edu/reports/abstracts.php?rid=sipi-414>

REFEREED BOOK CHAPTERS

(Senior author is underlined; authors who were graduate students at the time the work was performed are marked with a * if I was their principal research advisor, with a ☆ if I was a coadvisor of their work, and are otherwise marked with a †. Undergraduate authors who worked under my supervision are marked with a ♣, and postdoctoral research associates who worked under my supervision are marked with a ●.)

- B2. **J. P. Haldar**, Z.-P. Liang. “‘Early’ Constrained Reconstruction Methods.” In *MRI Reconstruction: Theory, Methods and Applications*. M. Doneva, M. Akcakaya, and C. Prieto, Eds., Academic Press, 2022, pp. 105–125.
<http://dx.doi.org/10.1016/B978-0-12-822726-8.00014-2>
[Invited Chapter](#).
- B1. Y. Zhuo[†], X.-L. Wu[†], **J. P. Haldar**[†], T. Marin[†], W.-m. Hwu, Z.-P. Liang, B. P. Sutton. “Using GPUs to Accelerate Advanced MRI Reconstruction with Field Inhomogeneity Compensation.” In *GPU Computing Gems Emerald Edition*. W.-m. W. Hwu, Ed., Morgan Kaufmann, 2011, pp. 709–722.
<http://dx.doi.org/10.1016/B978-0-12-384988-5.00044-9>

CONFERENCE PROCEEDINGS

(Senior author is underlined; authors who were graduate students at the time the work was performed are marked with a * if I was their principal research advisor, with a ☆ if I was a coadvisor of their work, and are otherwise marked with a †. Undergraduate authors who worked under my supervision are marked with a ♣, and postdoctoral research associates who worked under my supervision are marked with a ●.)

- C176. D. Kim, J. Chen, J. Xiao, B. P. Lee, K. King, **J. P. Haldar**, N. A. Terrault, Z. Fan. “Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) in In-Vivo Body: Feasibility Study on Liver and Prostate.” *American Association of Physicists in Medicine Annual Meeting*, Washington, DC, 2022, TH-A-207-6. (abstract)
[Recipient of a Best in Physics Award](#).
<https://w4.aapm.org/meetings/2022AM/programInfo/programAbs.php?sid=10639&aid=66781>
- C175. H.-T. Kung*, S. X. Cui, J. T. Kaplan, A. A. Joshi, R. M. Leahy, K. S. Nayak, J. Acharya, **J. P. Haldar**. “Diffusion tensor imaging of the brain on a prototype 0.55T system using SNR-enhancing joint reconstruction.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 3454. (abstract)
<https://index.mirasmart.com/ISMRM2022/PDFfiles/3454.html>
- C174. Y. Liu*, C. Liao, D. Kim, K. Setsompop, **J. P. Haldar**. “Estimating multicomponent 2D relaxation spectra with a ViSTa-MR fingerprinting acquisition.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4389. (abstract)
[Recipient of a Magna Cum Laude ISMRM Merit Award](#).
<https://index.mirasmart.com/ISMRM2022/PDFfiles/4389.html>
- C173. J. Wang*, **J. P. Haldar**. “Optimizing k-space averaging patterns for advanced denoising-reconstruction methods.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4052. (abstract)
<https://index.mirasmart.com/ISMRM2022/PDFfiles/4052.html>
- C172. F. Lam, Y. Li, Y. Zhao, **J. P. Haldar**. “Improving lipid suppression for 1H-MRSI using region-optimized virtual coils.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 2621. (abstract)
<https://index.mirasmart.com/ISMRM2022/PDFfiles/2621.html>
- C171. D. Kim, B. P. Lee, J. Chen, K. King, **J. P. Haldar**, N. A. Terrault, Z. Fan. “Probing liver microstructure in-vivo using diffusion-relaxation correlation spectroscopic imaging (DR-CSI).” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 3369. (abstract)
<https://index.mirasmart.com/ISMRM2022/PDFfiles/3369.html>
- C170. C. Liao, X. Cao, S. S. Iyer, Z. Zhou, Y. Liu*, **J. Haldar**, M. Yurt, T. Gong, Z. Wu, H. He, J. Zhong, A. Kerr, K. Setsompop. “Mesoscale myelin-water fraction and T1/T2/PD mapping through optimized 3D ViSTa-MRF and stochastic reconstruction with preconditioning.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 365. (abstract)
[Recipient of a Summa Cum Laude ISMRM Merit Award](#).
<https://index.mirasmart.com/ISMRM2022/PDFfiles/0365.html>

- C169. N. Wang, C. Liao, S. Srinivasan, X. Cao, **J. Haldar**, **K. Setsompop**. “Circular echo-planar time-resolved imaging (cEPTI) for rapid time-resolved quantitative imaging.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 761. (abstract)
<https://index.mirasmart.com/ISMRM2022/PDFfiles/0761.html>
- C168. H.-T. Kung*, S. X. Cui, J. T. Kaplan, A. A. Joshi, R. M. Leahy, K. S. Nayak, J. Acharya, **J. P. Haldar**. “SNR-Enhancing Image Reconstruction for Diffusion Tensor Imaging on a Prototype 0.55T System.” *ISMRM Workshop on Low Field MRI*, 2022. (abstract)
<https://cds.ismrm.org/protected/LowField22/abstracts/Kung.pdf>
- C167. D. Kim*, S. F. Cauley, K. S. Nayak, R. M. Leahy, **J. P. Haldar**. “Region-Optimized Virtual (ROVir) coils: Application of sensor-domain beamforming for localizing and/or suppressing spatial regions.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 64. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/0064.html>
[Recipient of a Summa Cum Laude ISMRM Merit Award.](#)
- C166. D. Kim*, R. A. Lobos*, J. Coll-Font, M. van den Boomen, J. Conklin, J. Pang, D. Staeb, P. Speier, X. Bi, B. Ghoshhajra, **J. P. Haldar**, **C. T. Nguyen**. “Feasibility of single breath-hold CINE with combined simultaneous multi-slice (SMS) and region-optimized virtual (ROVir) coils.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 25. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/0025.html>
[Recipient of a Magna Cum Laude ISMRM Merit Award.](#)
- C165. Y. Liu*, K. Setsompop, **J. P. Haldar**. “Accelerating gSlider-based diffusion MRI: Phase constraints enable reduced RF encoding.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 1179. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/1179.html>
- C164. Y. Arefeen†, T. H. Kim, **J. Haldar**, E. Grant, B. Gagoski, B. Bilgic, **E. Adalsteinsson**. “Rapid fetal HASTE imaging using variable flip angles and simultaneous multislice wave-LORAKS.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 347. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/0347.html>
[Recipient of a Summa Cum Laude ISMRM Merit Award.](#)
- C163. T. H. Kim, Z. Zhang, J. Cho, B. Gagoski, **J. Haldar**, **B. Bilgic**. “Robust multi-shot EPI with untrained artificial neural networks: Unsupervised scan-specific deep learning for blip up-down acquisition (BUDA).” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 224. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/0224.html>
[Recipient of a Magna Cum Laude ISMRM Merit Award.](#)
- C162. G. Ramos-Llorden, R. A. Lobos*, T. H. Kim, Q. Tian, S. Tounetki, T. Witzel, B. Keil, A. Yendiki, B. Bilgic, **J. P. Haldar**, **S. Huang**. “Improved multi-shot EPI ghost correction for high gradient strength diffusion MRI using structured low-rank modeling k-space reconstruction.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 1346. (abstract)
<https://index.mirasmart.com/ISMRM2021/PDFfiles/1346.html>
- C161. Z. Fabian†, **J. P. Haldar**, R. M. Leahy, **M. Soltanolkotabi**. “3D Phase Retrieval at Nano-Scale via Accelerated Wirtinger Flow.” *EUSIPCO*, Amsterdam, 2020, pp. 2080–2084.
<https://doi.org/10.23919/Eusipco47968.2020.9287703>
- C160. D. Varadarajan*, C. Bhushan*, C. Gonzalez-Zacarias†, D. W. Shattuck, S. Choi†, A. A. Joshi, Y. Liu*, **J. P. Haldar**, **R. M. Leahy**. “BrainSuite Diffusion Pipeline (BDP): Processing Tools for Diffusion-MRI.” *Organization for Human Brain Mapping Annual Meeting*, 2020, p. 1910. (abstract)
<https://ww4.aievolution.com/hbm2001/index.cfm?do=abs.viewAbs&abs=1708>
- C159. M. J. Fair, C. Liao, D. Kim*, D. Varadarajan, **J. P. Haldar**, **K. Setsompop**. “Diffusion-PEPTIDE: rapid distortion-free diffusion-relaxometry imaging.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 953. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/0953.html>
[Recipient of a Summa Cum Laude ISMRM Merit Award.](#)
- C158. C.-C. Chan*, **J. P. Haldar**. “Local perturbation responses: A tool for understanding the characteristics of advanced nonlinear MR reconstruction algorithms.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 684. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/0684.html>
[Featured with a Power Pitch presentation.](#)

- C157. R. A. Lobos*, T. H. Kim*, K. Setsompop, **J. P. Haldar**. “Advanced new linear predictive reconstruction methods for simultaneous multislice imaging.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 3437. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/3437.html>
- C156. J. Wang*, **J. P. Haldar**. “Transform-Domain g-Factor Maps.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 3431. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/3431.html>
- C155. Y. Liu*, C. Liao†, K. Setsompop, **J. P. Haldar**. “An evaluation of q-space regularization strategies for gSlider with interlaced subsampling.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 4368. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/4368.html>
- C154. D. Kim*, J. Polimeni, K. Setsompop, **J. P. Haldar**. “On coil combination with optimal SNR for linear multichannel k-space reconstruction methods.” *International Society for Magnetic Resonance in Medicine Virtual Conference & Exhibition*, 2020, p. 3430. (abstract)
<https://index.mirasmart.com/ISMRM2020/PDFfiles/3430.html>
- C153. R. Lobos*, R. M. Leahy, **J. P. Haldar**. “Autoregression and Structured Low-Rank Modeling of Sinograms.” *IEEE International Symposium on Biomedical Imaging*, Iowa City, 2020, pp. 178–181.
[Finalist for the IEEE ISBI 2020 Best Student Paper Award.](#)
<https://doi.org/10.1109/ISBI45749.2020.9098484>
- C152. Y. Liu*, C. Liao†, K. Setsompop, **J. P. Haldar**. “An Evaluation of Regularization Strategies for Subsampled Single-Shell Diffusion MRI.” *IEEE International Symposium on Biomedical Imaging*, Iowa City, 2020, pp. 1437–1440.
<https://doi.org/10.1109/ISBI45749.2020.9098341>
- C151. **J. P. Haldar**. “Optimal Sampling & Reconstruction: Theory and Applications.” *ISMRM Workshop on Data Sampling & Image Reconstruction*, Sedona, 2020.
[Invited Presentation.](#)
<https://arxiv.org/abs/1911.09595>
- C150. S. Choi†, S. H. O’Neil, A. A. Joshi, X. Miao, J. Li, **J. P. Haldar**, T. Coates, R. M. Leahy, **J. C. Wood**. “Exploring anemia’s impact on brain microstructure, volume, functional connectivity, iron, and cognitive performance. *61st American Society of Hematology Annual Meeting Exposition*, Orlando, 2019. *Blood* 134 (Supplement.1):3553, 2019. (abstract)
[Recipient of an ASH Abstract Achievement Award.](#)
<https://doi.org/10.1182/blood-2019-129544>
- C149. T. H. Kim*, **J. P. Haldar**. “Learning how to interpolate Fourier data with unknown autoregressive structure: An ensemble-based approach.” *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, 2019, pp. 1471–1475.
[Invited Presentation.](#)
<https://doi.org/10.1109/IEEECONF44664.2019.9048755>
- C148. R. A. Lobos*, R. M. Leahy, **J. P. Haldar**. “Low-Rank Modeling of Local Sinogram Neighborhoods with Tomographic Applications.” *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, 2019, pp. 65–68.
[Invited Presentation.](#)
<https://doi.org/10.1109/IEEECONF44664.2019.9048651>
- C147. T. H. Kim*, **J. P. Haldar**. “Learning-based computational MRI reconstruction without big data: From structured low-rank matrices to recurrent neural networks.” *Wavelets and Sparsity XVIII, Proceedings of SPIE 11138*, San Diego, 2019, p. 1113817.
[Invited Presentation.](#)
<https://doi.org/10.1117/12.2527584>
- C146. D. Kim*, **J. P. Haldar**. “Multidimensional Diffusion-Relaxation Correlation Spectroscopic Imaging.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019.
[Invited Presentation, Member-Initiated Symposium on Combined Diffusion-Relaxometry Microstructure Imaging.](#)
https://www.ismrm.org/19/program_files/MIS22.htm
- C145. D. Varadarajan*, **J. P. Haldar**. “Learning-Based Jointly-Optimal Design of the Diffusion Encoding Scheme and Orientation Estimation Method for Diffusion MRI.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 554. (abstract)
[Recipient of a Magna Cum Laude ISMRM Merit Award.](#)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/0554.html>
- C144. D. Kim*, B. Zhao, L. L. Wald, **J. P. Haldar**. “Multidimensional T1 Relaxation–T2 Relaxation Correlation Spectroscopic Imaging with a Magnetic Resonance Fingerprinting Acquisition.” *International Society for Magnetic Resonance*

- in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 4991. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/4991.html>
- C143. T. H. Kim*, P. Garg*, **J. P. Haldar**. “LORAKI: Reconstruction of Undersampled k-space Data using Scan-Specific Autocalibrated Recurrent Neural Networks.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 4647. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/4647.html>
- C142. R. A. Lobos*, **J. P. Haldar**. “Improving the Performance of Accelerated Image Reconstruction in K-Space: The Importance of Kernel Shape.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 2407. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/2407.html>
- C141. Y. Liu*, **J. P. Haldar**. “NAPALM: An Algorithm for MRI Reconstruction with Separate Magnitude and Phase Regularization.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 4764. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/4764.html>
- C140. Y. Liu*, C. Liao†, K. Setsompop, **J. P. Haldar**. “Whole-brain DTI at 860 μm isotropic resolution in 10 minutes on a commercial 3T Scanner.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 3352. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/3352.html>
- C139. F. Seppehrband, R. P. Cabeen, J. Jin, **J. P. Haldar**, A. W. Toga. “In-vivo diffusion imaging of hippocampal network with 600 μm isotropic resolution at 7T.” *International Society for Magnetic Resonance in Medicine 27th Scientific Meeting*, Montreal, 2019, p. 996. (abstract)
<https://index.mirasmart.com/ISMRM2019/PDFfiles/0996.html>
- C138. D. Kim*, J. L. Wisnowski, C. T. Nguyen, **J. P. Haldar**. “Multidimensional T1 Relaxation-T2 Relaxation Correlation Spectroscopic Imaging (RR-CSI) for In Vivo Imaging of Microstructure.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 783. (abstract)
 Recipient of a Summa Cum Laude ISMRM Merit Award.
 Featured as one of the ‘Science & Education Highlights’ of the meeting (32 highlights were selected from 5,651 abstracts).
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/0783.html>
- C137. T. H. Kim*, **J. P. Haldar**. “Assessing MR image reconstruction quality using the Fourier Radial Error Spectrum plot.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 249. (abstract)
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/0249.html>
- C136. R. A. Lobos*, A. Javed†, K. S. Nayak, W. S. Hoge, **J. P. Haldar**. “Robust Autocalibrated LORAKS for Improved EPI Ghost Correction with Structured Low-Rank Matrix Models.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 3553. (abstract)
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/3553.html>
- C135. D. Varadarajan*, **J. P. Haldar**. “ERFO: Improved ODF estimation by combining machine learning with linear estimation theory.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 1557. (abstract)
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/1557.html>
- C134. B. Zhao, **J. P. Haldar**, C. Liao†, D. Ma, M. A. Griswold, K. Setsompop, L. L. Wald. “Optimal experiment design for magnetic resonance fingerprinting: New insights and further improvements.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 674. (abstract)
 Recipient of a Magna Cum Laude ISMRM Merit Award.
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/0674.html>
- C133. B. Zhao, B. Gagoski, **J. P. Haldar**, E. Adalsteinsson, E. Grant, L. L. Wald. “A subspace approach to accelerated HASTE acquisition for fetal brain MRI.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 2450. (abstract)
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/2450.html>
- C132. B. Bilgic, T. H. Kim*, C. Liao†, M. K. Manhard, L. L. Wald, **J. P. Haldar**, K. Setsompop. “Improving parallel imaging by jointly reconstructing multi-contrast data.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 3505. (abstract)
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/3505.html>
- C131. Y. Bliesener†, S. G. Lingala, **J. P. Haldar**, K. S. Nayak. “Influence of whole-brain DCE-MRI (k,t) sampling strategies on variance of pharmacokinetic parameter estimates.” *Joint Annual Meeting ISMRM-ESMRMB*, Paris, 2018, p. 555. (abstract)
 Featured with a Power Pitch presentation (Hand-selected as one of the 330 most interesting abstracts out of 5,651 accepted).
<https://cds.ismrm.org/protected/18MProceedings/PDFfiles/0555.html>

- C130. D. Kim*, J. L. Wisnowski, C. T. Nguyen, **J. P. Haldar**. “Probing in vivo microstructure with T1-T2 Relaxation Correlation Spectroscopic Imaging.” *IEEE International Symposium on Biomedical Imaging*, Washington, D.C., 2018, pp. 675–678.
<https://doi.org/10.1109/ISBI.2018.8363664>
- C129. D. Varadarajan*, **J. P. Haldar**. “Towards optimal linear estimation of orientation distribution functions with arbitrarily sampled diffusion MRI data.” *IEEE International Symposium on Biomedical Imaging*, Washington, D.C., 2018, pp. 743–746.
<https://doi.org/10.1109/ISBI.2018.8363680>
- C128. R. A. Lobos*, A. Javed†, K. S. Nayak, W. S. Hoge, **J. P. Haldar**. “Robust autocalibrated LORAKS for EPI ghost correction.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Washington, D.C., 2018, pp. 663–666.
<https://doi.org/10.1109/ISBI.2018.8363661>
- C127. T. H. Kim*, **J. P. Haldar**. “The Fourier radial error spectrum plot: A more nuanced quantitative evaluation of image reconstruction quality.” *IEEE International Symposium on Biomedical Imaging*, Washington, D.C., 2018, pp. 61–64.
<https://doi.org/10.1109/ISBI.2018.8363523>
- C126. B. Kim,† D. B. Kay,† N. Schweighofer, **J. P. Haldar**, R. M. Leahy, S. Choi,† B. Fisher, C. J. Winstein. “Quantification of corticospinal tract using DTI in chronic stroke survivors.” *Society for Neuroscience 47th Annual Meeting*, Washington, DC, 2017, p. 306.13. (Abstract)
- C125. D. Kim,* J. L. Wisnowski, **J. P. Haldar**. “Improved Efficiency for Microstructure Imaging using High-Dimensional MR Correlation Spectroscopic Imaging.” *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, 2017, pp. 1264–1268.
[Invited Presentation.](#)
<https://doi.org/10.1109/ACSSC.2017.8335555>
- C124. **J. P. Haldar**, T. H. Kim.* “Computational imaging with LORAKS: Reconstructing linearly predictable signals using low-rank matrix regularization.” *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, 2017, pp. 1870–1874.
[Invited Presentation.](#)
<https://doi.org/10.1109/ACSSC.2017.8335687>
- C123. D. Kim,* J. L. Wisnowski, **J. P. Haldar**. “MR Correlation Spectroscopic Imaging of Multidimensional Exponential Decays: Probing Microstructure with Diffusion and Relaxation.” *Wavelets and Sparsity XVII, Proceedings of SPIE 10394*, San Diego, 2017, p. 103940D.
[Invited Presentation.](#)
<http://dx.doi.org/10.1117/12.2272833>
- C122. D. Varadarajan,* **J. Haldar**. “Theoretical characterization of angular resolution for linear ODF estimation.” *23rd Annual Meeting of the Organization for Human Brain Mapping*, Vancouver, 2017, p. 1747. (Abstract)
<https://ww5.aievolution.com/hbm1701/index.cfm?do=abs.viewAbs&abs=2715>
- C121. **J. P. Haldar**, D. Kim.* “OEDIPUS: Towards optimal deterministic k-space sampling for sparsity-constrained MRI.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 3877. (Abstract)
<https://cds.ismrm.org/protected/17MProceedings/PDFfiles/3877.html>
- C120. **J. P. Haldar**, K. Setsompop. “Fast high-resolution diffusion MRI using gSlider-SMS, interlaced subsampling, and SNR-enhancing joint reconstruction.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 175. (Abstract)
<https://cds.ismrm.org/protected/17MProceedings/PDFfiles/0175.html>
- C119. D. Kim,* **J. P. Haldar**. “Faster Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) using Optimized Experiment Design.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 176. (Abstract)
[Recipient of a Magna Cum Laude ISMRM Merit Award.](#)
<https://cds.ismrm.org/protected/17MProceedings/PDFfiles/0176.html>
- C118. D. Kim,* E. K. Doyle,†, J. L. Wisnowski, **J. P. Haldar**. “Phantom Validation of Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI) using Optimized Experiment Design.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 609. (Abstract)
[Recipient of the 1st Place Award for Best Abstract Presentation from the ISMRM Quantitative MR Study Group.](#)
<https://cds.ismrm.org/protected/17MProceedings/PDFfiles/0609.html>
- C117. T. H. Kim,* B. Bilgic, D. Polak, K. Setsompop, **J. P. Haldar**. “Wave-LORAKS for Faster Wave-CAIPI MRI.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 1037. (Abstract)

[Recipient of a Magna Cum Laude ISMRM Merit Award.](https://cds.ismrm.org/protected/17MPProceedings/PDFfiles/1037.html)

<https://cds.ismrm.org/protected/17MPProceedings/PDFfiles/1037.html>

- C116. R. A. Lobos,* T. H. Kim,* W. S. Hoge, **J. P. Haldar**. “Navigator-free EPI ghost correction using low-rank matrix modeling: Theoretical insights and practical improvements.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 449. (Abstract)
[Featured with a Power Pitch presentation \(Hand-selected as one of the 220 most interesting abstracts out of 6,780 submissions to the conference\).](#)
[Recipient of a Summa Cum Laude ISMRM Merit Award.](#)
<https://cds.ismrm.org/protected/17MPProceedings/PDFfiles/0449.html>
- C115. Y. Bliesener,[†] S. G. Lingala, **J. P. Haldar**, K. S. Nayak. “Comparison of (k,t) sampling schemes for DCE MRI pharmacokinetic parameter estimation.” *International Society for Magnetic Resonance in Medicine 25th Annual Meeting*, Honolulu, 2017, p. 1909. (Abstract)
<https://cds.ismrm.org/protected/17MPProceedings/PDFfiles/1909.html>
- C114. B. Kim,[†] D. B. Kay,[†] N. Schweighofer, **J. P. Haldar**, R. M. Leahy, B. Fisher, C. J. Winstein. “Changes in corticospinal tract microstructure are associated with motor performance improvement in chronic stroke.” *Society for Neuroscience 46th Annual Meeting*, San Diego, 2016, p. 520.26. (Abstract)
<https://www.sfn.org/Annual-Meeting/Neuroscience-2016/Sessions-and-Events/Program/Abstract-PDFs-2016>
- C113. B. Zhao, **J. P. Haldar**, K. Setsompop, L. L. Wald. “Optimal Experiment Design for Magnetic Resonance Fingerprinting.” *38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Orlando, 2016, pp. 453-456.
<https://doi.org/10.1109/EMBC.2016.7590737>
- C112. M. Chong*, C. Bhushan*, A. Joshi, **J. Haldar**, R. N. Spreng, R. Leahy. “Individual Performance of Resting fMRI Parcellation with Group Connectivity Priors.” *22nd Annual Meeting of the Organization for Human Brain Mapping*, Geneva, 2016, p. 2214. (Abstract)
- C111. C. Bhushan*, M. Chong*, S. Choi[†], A. Joshi, **J. Haldar**, H. Damasio, R. Leahy. “Non-local means filtering for cortical parcellation of resting fMRI.” *22nd Annual Meeting of the Organization for Human Brain Mapping*, Geneva, 2016, p. 2194. (Abstract)
- C110. **J. P. Haldar**, Q. Fan, K. Setsompop. “Whole-brain quantitative diffusion MRI at 660 μm resolution in 25 minutes using gSlider-SMS and SNR-enhancing joint reconstruction.” *International Society for Magnetic Resonance in Medicine 24th Annual Meeting*, Singapore, 2016, p. 102. (Abstract)
[Featured with a Power Pitch presentation \(Hand-selected as one of the 165 most interesting abstracts out of 5,915 submissions to the conference\).](#)
<https://cds.ismrm.org/protected/16MPProceedings/PDFfiles/0102.html>
- C109. D. Kim*, J. H. Kim, **J. P. Haldar**. “Diffusion-Relaxation Correlation Spectroscopic Imaging (DR-CSI): An Enhanced Approach to Imaging Microstructure.” *International Society for Magnetic Resonance in Medicine 24th Annual Meeting*, Singapore, 2016, p. 660. (Abstract)
[One of the top ten most popular abstracts of the meeting \(out of 5,915 submissions\).](#) <http://www.ismrm.org/2016-annual-meeting-exhibition/most-popular-sessions-abstracts-of-the-2016-meeting/>
<https://cds.ismrm.org/protected/16MPProceedings/PDFfiles/0660.html>
- C108. T. H. Kim*, K. Setsompop, **J. P. Haldar**. “SENSE-LORAKS: Phase-Constrained Parallel MRI without Phase Calibration.” *International Society for Magnetic Resonance in Medicine 24th Annual Meeting*, Singapore, 2016, p. 1089. (Abstract)
[Recipient of a Magna Cum Laude ISMRM Merit Award.](#)
<https://cds.ismrm.org/protected/16MPProceedings/PDFfiles/1089.html>
- C107. D. Varadarajan*, **J. P. Haldar**. “A Theoretical Framework for Sampling and Reconstructing Ensemble Average Propagators in Diffusion MRI.” *International Society for Magnetic Resonance in Medicine 24th Annual Meeting*, Singapore, 2016, p. 2049. (Abstract)
<https://cds.ismrm.org/protected/16MPProceedings/PDFfiles/2049.html>
- C106. B. Zhao, **J. P. Haldar**, K. Setsompop, L. L. Wald. “Towards Optimized Experiment Design for Magnetic Resonance Fingerprinting.” *International Society for Magnetic Resonance in Medicine 24th Annual Meeting*, Singapore, 2016, p. 2835. (Abstract)
<https://cds.ismrm.org/protected/16MPProceedings/PDFfiles/2835.html>
- C105. T. H. Kim*, K. Setsompop, **J. P. Haldar**. “Partial Fourier SENSE Reconstruction without Phase Calibration.” *ISMRM Workshop on Data Sampling & Image Reconstruction*, Sedona, 2016. (Abstract)
<http://cds.ismrm.org/protected/Data16/Program/Abstracts/Kim.pdf>

- C104. B. Kim[†], Y. Oh, R. M. Leahy, **J. P. Haldar**, N. Schweighofer, C. J. Winstein. “Is structural connectivity of basal ganglia associated with learned non-use in chronic stroke?” *American Society of Neurorehabilitation Annual Meeting*, Chicago, 2015. (Abstract)
- C103. B. Kim[†], Y. Oh, R. M. Leahy, **J. P. Haldar**, N. Schweighofer, C. J. Winstein. “Brain sensorimotor structural network difference between two hemispheres in chronic stroke.” *Society for Neuroscience 45th Annual Meeting*, Chicago, 2015. (Abstract)
<http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=0e67b6fe-fac5-47db-88f1-6d0fe45fbce1&cKey=a3118759-3aa8-4a6b-8112-d0b581b40188&mKey=d0ff4555-8574-4fbb-b9d4-04eec8ba0c84>
- C102. V. L. Landes[†], T. H. Kim^{*}, **J. P. Haldar**, K. S. Nayak. “Experimental Validation of SMS-LORAKS.” *ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications*, Pacific Grove, 2015. (Abstract)
<http://cds.ismrm.org/protected/MultiSlice15/Program/Abstracts/LandesSMS-LORAKS.pdf>
- C101. M. Chong^{*}, A. Joshi, **J. Haldar**, E. DuPre[†], W.-M. Luh, D. Shattuck, R. N. Spreng, R. Leahy. “A Group Approach to Functional Cortical Parcellation from Resting-State fMRI.” *21st Annual Meeting of the Organization for Human Brain Mapping*, Honolulu, 2015, p. 3778. (Abstract)
- C100. **J. P. Haldar**. “Low-Rank Modeling of Local k-Space Neighborhoods: From Phase and Support Constraints to Structured Sparsity.” *Wavelets and Sparsity XVI, Proceedings of SPIE 9597*, San Diego, 2015, p. 959710.
[Invited Presentation.](http://dx.doi.org/10.1117/12.2186705)
<http://dx.doi.org/10.1117/12.2186705>
- C99. **J. P. Haldar**. “AC-LORAKS: Autocalibrated Low-Rank Modeling of Local k-Space Neighborhoods.” *International Society for Magnetic Resonance in Medicine 23rd Annual Meeting*, Toronto, 2015, p. 2430. (Abstract)
<https://cds.ismrm.org/protected/15MProceedings/PDFfiles/2430.pdf>
- C98. D. Kim^{*}, J. H. Kim, **J. P. Haldar**. “Automatic Tissue Decomposition using Nonnegative Matrix Factorization for Noisy MR Magnitude Images.” *International Society for Magnetic Resonance in Medicine 23rd Annual Meeting*, Toronto, 2015, p. 3701. (Abstract)
<https://cds.ismrm.org/protected/15MProceedings/PDFfiles/3701.pdf>
- C97. T. H. Kim^{*}, **J. P. Haldar**. “Simultaneous Multi-slice MRI Reconstruction using LORAKS.” *International Society for Magnetic Resonance in Medicine 23rd Annual Meeting*, Toronto, 2015, p. 78. (Abstract)
[Recipient of a Magna Cum Laude ISMRM Merit Award.](https://cds.ismrm.org/protected/15MProceedings/PDFfiles/0078.pdf)
<https://cds.ismrm.org/protected/15MProceedings/PDFfiles/0078.pdf>
- C96. D. Varadarajan^{*}, **J. P. Haldar**. “A New Linear Transform Approach for Estimating ODFs from Multi-Shell Diffusion Data.” *International Society for Magnetic Resonance in Medicine 23rd Annual Meeting*, Toronto, 2015, p. 2816. (Abstract)
<https://cds.ismrm.org/protected/15MProceedings/PDFfiles/2816.pdf>
- C95. M. C. Chambers[†], C. Bhushan^{*}, **J. P. Haldar**, R. M. Leahy, D. W. Shattuck. “Correcting Inhomogeneity-Induced Distortion in fMRI using Non-Rigid Registration.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York City, 2015, pp. 1364–1367.
<http://dx.doi.org/10.1109/ISBI.2015.7164129>
- C94. **J. P. Haldar**. “Autocalibrated LORAKS for Fast Constrained MRI Reconstruction.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York City, 2015, pp. 910–913.
<http://dx.doi.org/10.1109/ISBI.2015.7164018>
- C93. D. Kim^{*}, **J. P. Haldar**. “Nonnegative Matrix Factorization for Tissue Mixture Modeling with Noisy MR Magnitude Image Sequences.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York City, 2015, pp. 1028–1031.
<http://dx.doi.org/10.1109/ISBI.2015.7164046>
- C92. T. H. Kim^{*}, **J. P. Haldar**. “SMS-LORAKS: Calibrationless Simultaneous Multislice MRI using Low-Rank Matrix Modeling.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York City, 2015, pp. 323–326.
<http://dx.doi.org/10.1109/ISBI.2015.7163878>
- C91. D. Varadarajan^{*}, **J. P. Haldar**. “MS-FRACT: Optimized Linear Transform Methods for ODF Estimation in Multi-Shell Diffusion MRI.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York City, 2015, pp. 1172–1175.
<http://dx.doi.org/10.1109/ISBI.2015.7164081>
- C90. B. Kim[†], D. B. Kay[†], Y. Yi[†], D. Lee[†], Y. Chaudhry[†], **J. P. Haldar**, R. M. Leahy, C. J. Winstein. “DTI analysis of corticospinal tract using BrainSuite: A potential biomarker of upper extremity therapeutic response to neurorehabilitation in chronic stroke.” *Society for Neuroscience 44th Annual Meeting*, Washington, DC, 2014. (Abstract)

- C89. M. Chambers[†], C. Bhushan^{*}, T. Pirnia, K. Narr, **J. Haldar**, R. Leahy, D. Shattuck. "Registration-Based Distortion and Intensity Correction in fMRI." 20th Annual Meeting of the Organization for Human Brain Mapping, Hamburg, 2014, p. 3497. (Abstract)
- C88. **J. P. Haldar**. "LORAKS: Low-Rank Modeling of Local k -Space Neighborhoods." *Joint Annual Meeting ISMRM-ESMRMB*, Milan, 2014, p. 85. (Abstract)
 Featured with a PowerPoster presentation (Hand-selected as one of the 150 most interesting abstracts out of 6,481 submissions to the conference).
<https://cds.ismrm.org/protected/14MProceedings/PDFfiles/0085.pdf>
- C87. D. Varadarajan^{*}, **J. P. Haldar**. "A Novel Approach for Statistical Estimation of HARDI Diffusion Parameters from Rician and Non-Central Chi Magnitude Images." *Joint Annual Meeting ISMRM-ESMRMB*, Milan, 2014, p. 801. (Abstract)
 Featured with a PowerPoster presentation (Hand-selected as one of the 150 most interesting abstracts out of 6,481 submissions to the conference).
 Recipient of a Magna Cum Laude ISMRM Merit Award.
<https://cds.ismrm.org/protected/14MProceedings/PDFfiles/0801.pdf>
- C86. J. Zhuo^{*}, **J. P. Haldar**. "P-LORAKS: Low rank modeling of local k -space neighborhoods with parallel imaging data." *Joint Annual Meeting ISMRM-ESMRMB*, Milan, 2014, p. 745. (Abstract)
 Recipient of a Magna Cum Laude ISMRM Merit Award.
<https://cds.ismrm.org/protected/14MProceedings/PDFfiles/0745.pdf>
- C85. C. Bhushan^{*}, **J. P. Haldar**, A. A. Joshi, D. Shattuck, R. M. Leahy. "INVERSION: A robust method for co-registration of MPRAGE and Diffusion MRI images." *Joint Annual Meeting ISMRM-ESMRMB*, Milan, 2014, p. 2583. (Abstract)
<https://cds.ismrm.org/protected/14MProceedings/PDFfiles/2583.pdf>
- C84. S. Ashrafulla^{*}, **J. P. Haldar**, J. C. Mosher, R. M. Leahy. "Causality in variance in electrophysiological data using the ARCH model." *Asilomar Conference on Signals, Systems & Computers*, Pacific Grove, 2013, pp. 798–802.
<http://dx.doi.org/10.1109/ACSSC.2013.6810396>
- C83. D. Beroukhim[†], M. Konersman[†], M. Chong[†], A. A. Joshi, C. Bhushan^{*}, D. W. Shattuck, **J. P. Haldar**, R. M. Leahy, C. J. Winstein. "Effects of rehabilitation post-stroke: DTI analysis of corticospinal tract characteristics using BrainSuite13." *Society for Neuroscience 43rd Annual Meeting*, San Diego, 2013. (Abstract)
- C82. D. Shattuck, A. Joshi, **J. Haldar**, C. Bhushan^{*}, S. Choi, A. Krause, J. Wisnowski, H. Damasio, A. Toga, R. M. Leahy. "New BrainSuite13 Tools for Image Segmentation, Registration, Connectivity Analysis and Visualization." *19th Annual Meeting of the Organization for Human Brain Mapping*, Seattle, 2013, p. 1688. (Abstract)
- C81. S. Choi, C. Bhushan^{*}, A. Joshi, K. Raphel, D. Tranel, D. Shattuck, **J. Haldar**, R. M. Leahy, H. Damasio, J. Wisnowski. "Altered orbitofrontal tissue microstructure in patients with chronic anterior temporal lobe lesions." *19th Annual Meeting of the Organization for Human Brain Mapping*, Seattle, 2013, p. 3781. (Abstract)
- C80. **J. P. Haldar**, D. W. Shattuck, R. M. Leahy. "Estimation of White Matter Fiber Orientations with the Funk-Radon and Cosine Transform." *International Society for Magnetic Resonance in Medicine 21st Scientific Meeting*, Salt Lake City, 2013, p. 771. (Abstract)
<https://cds.ismrm.org/protected/13MProceedings/PDFfiles/0771.PDF>
- C79. C. Bhushan^{*}, A. A. Joshi, R. M. Leahy, **J. P. Haldar**. "Accelerating Data Acquisition for Reversed-Gradient Distortion Correction in Diffusion MRI: A Constrained Reconstruction Approach." *International Society for Magnetic Resonance in Medicine 21st Scientific Meeting*, Salt Lake City, 2013, p. 55. (Abstract)
 Recipient of a Magna Cum Laude ISMRM Merit Award.
<https://cds.ismrm.org/protected/13MProceedings/PDFfiles/0055.PDF>
- C78. D. W. Shattuck, A. A. Joshi, **J. P. Haldar**, C. Bhushan^{*}, S. Choi, A. C. Krause, J. L. Wisnowski, A. W. Toga, R. M. Leahy. "Software Tools for Anatomical ROI-based Connectivity Analysis." *International Society for Magnetic Resonance in Medicine 21st Scientific Meeting*, Salt Lake City, 2013, p. 2691. (Abstract)
<https://cds.ismrm.org/protected/13MProceedings/PDFfiles/2691.PDF>
- C77. **J. P. Haldar**, R. M. Leahy. "The Equivalence of Linear Spherical Deconvolution and Model-Free Linear Transform Methods for Diffusion MRI." *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, San Francisco, 2013, pp. 504–507.
<http://dx.doi.org/10.1109/ISBI.2013.6556523>
- C76. D. Varadarajan^{*}, **J. P. Haldar**. "A Quadratic Majorize-Minimize Framework for Statistical Estimation with Noisy Rician and Noncentral Chi-Distributed MR Images." *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, San Francisco, 2013, pp. 708–711.
<http://dx.doi.org/10.1109/ISBI.2013.6556574>

- C75. **J. P. Haldar**. “Calibrationless Partial Fourier Reconstruction of MR Images with Slowly-Varying Phase: A Rank-Deficient Matrix Recovery Approach.” *ISMRM Workshop on Data Sampling & Image Reconstruction*, Sedona, 2013. (Abstract)
<http://cds.ismrm.org/protected/DataSampling13/Program/oral/9Haldar.pdf>
- C74. C. Bhushan*, **J. P. Haldar**, A. A. Joshi, R. M. Leahy. “Correcting Susceptibility-Induced Distortion in Diffusion-Weighted MRI using Constrained Nonrigid Registration.” *Asia Pacific Signal and Information Processing Association (APSIPA) Annual Summit and Conference*, Hollywood, 2012.
[Invited Presentation.](http://www.apsipa.org/proceedings_2012/papers/391.pdf)
http://www.apsipa.org/proceedings_2012/papers/391.pdf
- C73. **J. P. Haldar**, Y. Lin*, B. Bai, R. M. Leahy. “Edge Artifact Reduction Methods for Iterative PET Reconstruction.” *IEEE Medical Imaging Conference*, Anaheim, 2012. (Abstract)
- C72. Y. Lin*, **J. P. Haldar**, Q. Li, R. M. Leahy. “Kinetic Parameter Estimation in Dynamic PET with a Sparsity-Regularized Mixture Model.” *IEEE Medical Imaging Conference*, Anaheim, 2012. (Abstract)
[Recipient of the 1st place MIC student paper award.](#)
- C71. S. Ashrafulla*, **J. P. Haldar**, A. A. Joshi, R. M. Leahy. “Canonical Granger Causality.” *18th International Conference on Biomagnetism*, Paris, 2012. (Abstract)
- C70. **J. P. Haldar**, D. W. Shattuck, H. Damasio, R. M. Leahy. “Improved Diffusion Tractography with the Funk-Radon and Cosine Transform.” *18th Annual Meeting of the Organization for Human Brain Mapping*, Beijing, 2012, p. 408. (Abstract)
- C69. J. Gai, J. L. Holtrop†, X.-L. Wu†, F. Lam†, M. Fu†, **J. P. Haldar**, W.-m. W. Hwu, Z.-P. Liang, B. P. Sutton. “More IMPATIENT: A Gridding-Accelerated Toeplitz-based Strategy for Non-Cartesian High-Resolution 3D MRI on GPU.” *International Society for Magnetic Resonance in Medicine 20th Scientific Meeting*, Melbourne, 2012, p. 2550. (Abstract)
<https://cds.ismrm.org/protected/12MProceedings/PDFfiles/2550.pdf>
- C68. **J. P. Haldar**, R. M. Leahy. “New Linear Transforms for Data on a Fourier 2-Sphere with Application to Diffusion MRI.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Barcelona, 2012, pp. 402-405.
<http://dx.doi.org/10.1109/ISBI.2012.6235569>
- C67. S. Ashrafulla*, **J. P. Haldar**, A. A. Joshi, R. M. Leahy. “Canonical Granger Causality Applied to Functional Brain Data.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Barcelona, 2012, pp. 1751-1754.
<http://dx.doi.org/10.1109/ISBI.2012.6235919>
- C66. F. Lam†, S. D. Babacan, **J. P. Haldar**, N. Schuff, Z.-P. Liang. “Denoising Diffusion-Weighted MR Image Sequences using Low Rank and Edge Constraints.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Barcelona, 2012, pp. 1401-1404.
<http://dx.doi.org/10.1109/ISBI.2012.6235830>
- C65. Y. Lin*, Q. Li, **J. P. Haldar**, R. M. Leahy. “Constrained Mixture Modeling for the Estimation of Kinetic Parameters in Dynamic PET.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Barcelona, 2012, pp. 1004-1007.
<http://dx.doi.org/10.1109/ISBI.2012.6235727>
- C64. D. Clewett†, **J. Haldar**, H. Damasio, M. Mather. “Subregions of the thalamus connected with temporal and parietal cortex show greater age-related variation than other subregions.” *Cognitive Neuroscience Society*, Chicago, 2012. (Abstract)
- C63. S.-L. Liew†, K. A. Garrison†, **J. Haldar**, C. J. Winstein, H. Damasio, L. Aziz-Zadeh. “Structural neuroanatomy of lesioned brains in individuals with chronic stroke and functional correlations with action observation networks.” *Society for Neuroscience 41st Annual Meeting*, Washington, D.C., 2011. (Abstract)
- C62. **J. P. Haldar**†, J. H. Kim, S.-K. Song, Z.-P. Liang. “Accelerated Mouse Spinal Cord Diffusion Measurements with SNR-Enhancing Joint Reconstruction.” *International Society for Magnetic Resonance in Medicine 19th Scientific Meeting*, Montreal, 2011, p. 2073. (Abstract)
<https://cds.ismrm.org/protected/11MProceedings/PDFfiles/2073.pdf>
- C61. A. G. Christodoulou†, C. Brinegar†, B. Zhao†, **J. P. Haldar**†, H. Zhang, Y.-J. L. Wu, T. K. Hitchens, C. Ho, Z.-P. Liang. “First-Pass Myocardial Perfusion Imaging with Sparse (k,t)-Space Sampling.” *International Society for Magnetic Resonance in Medicine 19th Scientific Meeting*, Montreal, 2011, p. 2045. (Abstract)
<https://cds.ismrm.org/protected/11MProceedings/PDFfiles/2045.pdf>
- C60. B. Zhao†, **J. Haldar**†, A. Christodoulou†, Z.-P. Liang. “Image Reconstruction from Highly Undersampled (k, t)-space Data with Joint Partial Separability and Sparsity Constraints.” *International Society for Magnetic Resonance in Medicine 19th Scientific Meeting*, Montreal, 2011, p. 4375. (Abstract)
<https://cds.ismrm.org/protected/11MProceedings/PDFfiles/4375.pdf>

- C59. X.-L. Wu[†], J. Gai, F. Lam[†], M. Fu[†], **J. P. Haldar[†]**, Y. Zhuo[†], Z.-P. Liang, W.-M. Hwu, B. P. Sutton. “IMPATIENT MRI: Illinois Massively Parallel Acceleration Toolkit for Image reconstruction with ENhanced Throughput in MRI.” *International Society for Magnetic Resonance in Medicine 19th Scientific Meeting*, Montreal, 2011, p. 4396. (Abstract) <https://cds.ismrm.org/protected/11MProceedings/PDFfiles/4396.pdf>
- C58. **J. P. Haldar[†]**, Z.-P. Liang. “Low-Rank Approximations for Dynamic Imaging.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Chicago, 2011, pp. 1052–1055. [Invited Presentation.](#)
<http://dx.doi.org/10.1109/ISBI.2011.5872582>
- C57. **J. P. Haldar[†]**, Z.-P. Liang. “On MR Experiment Design with Quadratic Regularization.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Chicago, 2011, pp. 1676–1679.
<http://dx.doi.org/10.1109/ISBI.2011.5872726>
- C56. X.-L. Wu[†], J. Gai, F. Lam[†], M. Fu[†], **J. P. Haldar[†]**, Y. Zhuo[†], Z.-P. Liang, W.-m. Hwu, B. P. Sutton. “IMPATIENT MRI: Illinois Massively Parallel Acceleration Toolkit for Image reconstruction with ENhanced Throughput in MRI.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Chicago, 2011, pp. 69–72.
<http://dx.doi.org/10.1109/ISBI.2011.5872356>
- C55. F. Lam[†], **J. P. Haldar[†]**, Z.-P. Liang. “Motion Compensation for Reference-Constrained Image Reconstruction from Limited Data.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Chicago, 2011, pp. 73–76.
<http://dx.doi.org/10.1109/ISBI.2011.5872357>
- C54. B. Zhao[†], **J. P. Haldar[†]**, A. G. Christodoulou[†], Z.-P. Liang. “Further development of image reconstruction from highly undersampled (k, t)-space data with joint partial separability and sparsity constraints.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Chicago, 2011, pp. 1593–1596.
<http://dx.doi.org/10.1109/ISBI.2011.5872707>
- C53. X.-L. Wu[†], Y. Zhuo[†], J. Gai, F. Lam[†], M. Fu[†], **J. P. Haldar[†]**, W.-m. W. Hwu, Z.-P. Liang, B. P. Sutton. “Advanced MRI reconstruction toolbox with accelerating on GPU.” *Proceedings of SPIE*, vol. 7872, 2011, p. 78720Q.
<http://dx.doi.org/10.1117/12.872204>
- C52. Y. Zhuo[†], B. Sutton, X.-L. Wu[†], **J. Haldar[†]**, W.-m. Hwu, Z.-P. Liang. “Sparse Regularization in MRI Iterative Reconstruction using GPUs.” *3rd International Conference on Biomedical Engineering and Informatics*, Yantai, 2010, pp. 578–582.
<http://dx.doi.org/10.1109/BMEI.2010.5640008>
- C51. **J. P. Haldar[†]**, Z. Wang[†], G. Popescu, Z.-P. Liang. “Label-Free High-Resolution Imaging of Live Cells with Deconvolved Spatial Light Interference Microscopy.” *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Buenos Aires, 2010, pp. 3382–3385.
[Recipient of the first-place award in the EMBC 2010 student paper competition.](#)
<http://dx.doi.org/10.1109/IEMBS.2010.5627917>
- C50. A. G. Christodoulou[†], C. Brinegar[†], **J. P. Haldar[†]**, H. Zhang, Y.-J. L. Wu, L. M. Foley, T. K. Hitchens, Q. Ye, C. Ho, Z.-P. Liang. “High-Resolution Cardiac MRI Using Partially Separable Functions and Weighted Spatial Smoothness Regularization.” *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Buenos Aires, 2010, pp. 871–874.
<http://dx.doi.org/10.1109/IEMBS.2010.5627889>
- C49. X. Peng[†], H. Nguyen[†], **J. Haldar[†]**, D. Hernando[†], X.-P. Wang, Z.-P. Liang. “Correction of Field Inhomogeneity Effects on Limited k-Space MRSI Data using Anatomical Constraints.” *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Buenos Aires, 2010, pp. 883–886.
<http://dx.doi.org/10.1109/IEMBS.2010.5627873>
- C48. B. Zhao[†], **J. P. Haldar[†]**, Z.-P. Liang. “PSF Model-Based Reconstruction with Sparsity Constraint: Algorithm and Application to Real-Time Cardiac MRI.” *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Buenos Aires, 2010, pp. 3390–3393.
<http://dx.doi.org/10.1109/IEMBS.2010.5627934>
- C47. L.-W. Kuo, **J. P. Haldar[†]**, Y.-C. Lo, C.-L. Liu, Z.-P. Liang, W.-Y. I. Tseng. “Quantitative Improvement of Diffusion Spectrum Imaging Tractography using Statistical Denoising.” *ISMIRM-ESMRMB Joint Annual Meeting*, Stockholm, 2010, p. 1669. (Abstract)
https://cds.ismrm.org/protected/10MProceedings/PDFfiles/1669_2005.pdf
- C46. Y. Zhuo[†], X.-L. Wu[†], **J. P. Haldar[†]**, W.-m. W. Hwu, Z.-P. Liang, B. P. Sutton. “Multi-GPU Implementation for Iterative MR Image Reconstruction with Field Correction.” *ISMIRM-ESMRMB Joint Annual Meeting*, Stockholm, 2010, p. 2942. (Abstract)
https://cds.ismrm.org/protected/10MProceedings/PDFfiles/2942_4276.pdf

- C45. **J. P. Haldar**[†], **Z.-P. Liang**. “Spatiotemporal Imaging With Partially Separable Functions: A Matrix Recovery Approach.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Rotterdam, 2010, pp. 716–719.
[Recipient of the IEEE ISBI 2010 Best Student Paper Award.](#)
<http://dx.doi.org/10.1109/ISBI.2010.5490076>
- C44. **B. Zhao**[†], **J. P. Haldar**[†], **C. Brinegar**[†], **Z.-P. Liang**. “Low Rank Matrix Recovery for Real-Time Cardiac MRI.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Rotterdam, 2010, pp. 996–999.
<http://dx.doi.org/10.1109/ISBI.2010.5490156>
- C43. **H. M. Nguyen**[†], **J. P. Haldar**[†], **M. N. Do**, **Z.-P. Liang**. “Denoising of MR Spectroscopic Imaging Data with Spatial-Spectral Regularization.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Rotterdam, 2010, pp. 720–723.
<http://dx.doi.org/10.1109/ISBI.2010.5490073>
- C42. **Y. Zhuo**[†], **X.-L. Wu**[†], **J. P. Haldar**[†], **W.-m. Hwu**, **Z.-P. Liang**, **B. P. Sutton**. “Accelerating Iterative Field-Compensated MR Image Reconstruction on GPUs.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Rotterdam, 2010, pp. 820–823.
<http://dx.doi.org/10.1109/ISBI.2010.5490112>
- C41. **H. M. Nguyen**[†], **Z. J. Gahvari**[†], **J. P. Haldar**[†], **M. N. Do**, **Z.-P. Liang**. “Cramér-Rao Bound Analysis of Echo Time Selection for 1H-MR Spectroscopy.” *31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Minneapolis, 2009, pp. 2692-2695.
<http://dx.doi.org/10.1109/IEMBS.2009.5332450>
- C40. **J. P. Haldar**[†], **D. Hernando**[†], **Z.-P. Liang**. “Super-Resolution Reconstruction of MR Image Sequences with Contrast Modeling.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Boston, 2009, pp. 266–269.
<http://dx.doi.org/10.1109/ISBI.2009.5193035>
- C39. **W.-m. W. Hwu**, **D. Nandakumar**[†], **J. Haldar**[†], **I. C. Atkinson**, **B. Sutton**, **Z.-P. Liang**, **K. R. Thulborn**. “Accelerating MR Image Reconstruction on GPUs.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Boston, 2009, pp. 1283–1286.
<http://dx.doi.org/10.1109/ISBI.2009.5193297>
- C38. **J. P. Haldar**[†], **K. Sakaie**, **Z.-P. Liang**. “Resolution and Noise Properties of Linear Phase-Constrained Partial Fourier Reconstruction.” *International Society for Magnetic Resonance in Medicine 17th Scientific Meeting*, Honolulu, 2009, p. 2862. (Abstract)
<https://cds.ismrm.org/protected/09MProceedings/PDFfiles/02862.pdf>
- C37. **J. P. Haldar**[†], **Q. Gao**[†], **X. J. Zhou**, **Z.-P. Liang**. “Optimized Measurement of Anomalous Diffusion.” *International Society for Magnetic Resonance in Medicine 17th Scientific Meeting*, Honolulu, 2009, p. 3570. (Abstract)
<https://cds.ismrm.org/protected/09MProceedings/PDFfiles/03570.pdf>
- C36. **D. Hernando**[†], **P. Kellman**, **J. Haldar**[†], **Z.-P. Liang**. “Robust Water/Fat Separation in the Presence of Large Field Inhomogeneities Using a Graph Cut Algorithm.” *International Society for Magnetic Resonance in Medicine 17th Scientific Meeting*, Honolulu, 2009, p. 459. (Abstract)
[Winner of the I. I. Rabi Young Investigator Award.](#)
<https://cds.ismrm.org/protected/09MProceedings/PDFfiles/00459.pdf>
- C35. **D. Hernando**[†], **D. C. Karampinos**[†], **K. F. King**, **J. Haldar**[†], **J. G. Georgiadis**, **Z.-P. Liang**. “Removal of Olefinic Fat Signal in Body Diffusion-Weighted EPI Using a Dixon Method.” *International Society for Magnetic Resonance in Medicine 17th Scientific Meeting*, Honolulu, 2009, p. 2064. (Abstract)
<https://cds.ismrm.org/protected/09MProceedings/PDFfiles/02064.pdf>
- C34. **Q. Gao**[†], **J. P. Haldar**[†], **N. Rangwala**[†], **R. L. Magin**, **Z.-P. Liang**, **X. J. Zhou**. “Analysis of High b-Value Diffusion Images Using a Fractional Order Diffusion Model with Denoising Image Reconstruction.” *International Society for Magnetic Resonance in Medicine 17th Scientific Meeting*, Honolulu, 2009, p. 1418. (Abstract)
<https://cds.ismrm.org/protected/09MProceedings/PDFfiles/01418.pdf>
- C33. **J. P. Haldar**[†], **T.-H. Wu**, **Q. Wang**[†], **C.-I. Chen**, **S.-K. Song**, **Z.-P. Liang**. “Further Development in Anatomically Constrained MR Image Reconstruction: Application to Multimodal Imaging of Mouse Stroke.” *30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Vancouver, 2008, pp. 422-425.
<http://dx.doi.org/10.1109/IEMBS.2008.4649180>
- C32. **D. Hernando**[†], **P. Kellman**, **J. P. Haldar**[†], **Z.-P. Liang**. “A Network Flow Method for Improved MR Field Map Estimation in the Presence of Water and Fat.” *30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Vancouver, 2008, pp. 82-85.
[Student Paper Competition Geographic Finalist: North America.](#)
<http://dx.doi.org/10.1109/IEMBS.2008.4649096>

- C31. I. C. Atkinson, A. Lu, **J. P. Haldar**[†], Z.-P. Liang, K. R. Thulborn. “Human 17-Oxygen Imaging at 9.4T and Enhanced Reconstruction using 23-Sodium.” *American Society of Neuroradiology 46th Annual Meeting*, New Orleans, 2008, p. 214. (Abstract)
- C30. **J. P. Haldar**[†], Z.-P. Liang. “Joint Reconstruction of Noisy High-Resolution MR Image Sequences.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Paris, 2008, pp. 752-755.
<http://dx.doi.org/10.1109/ISBI.2008.4541105>
- C29. S. S. Stone[†], **J. P. Haldar**[†], S. C. Tsao[†], W.-M. W. Hwu, Z.-P. Liang, B. P. Sutton. “Accelerating Advanced MRI Reconstructions on GPUs.” *ACM International Conference on Computing Frontiers*, Ischia, 2008, pp. 261-272.
<http://doi.acm.org/10.1145/1366230.1366276>
- C28. **J. P. Haldar**[†], V. J. Wedeen, M. Nezamzadeh, G. Dai, N. Schuff, Z.-P. Liang. “Improved SNR in Diffusion Spectrum Imaging with Statistical Reconstruction.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 141. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/00141.pdf>
- C27. **J. P. Haldar**[†], D. Hernando[†], D. C. Karampinos[†], B. P. Sutton, J. G. Georgiadis, Z.-P. Liang. “Sensitivity Encoding of Chemical Shifts.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 1283. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/01283.pdf>
- C26. **J. P. Haldar**[†], S. S. Stone[†], H. Yi[†], S. C. Tsao[†], B. P. Sutton, W.-M. W. Hwu, Z.-P. Liang. “Fast MR Image Reconstruction using Graphics Processing Units.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 1493. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/01493.pdf>
- C25. I. C. Atkinson, K. R. Thulborn, A. Lu, **J. Haldar**[†], X. J. Zhou, T. Claiborne, Z.-P. Liang. “Quantitative 23-Sodium and 17-Oxygen MR Imaging in Human Brain at 9.4 Tesla Enhanced by Constrained k-Space Reconstruction.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 335. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/00335.pdf>
- C24. D. Hernando[†], **J. Haldar**[†], L. Ying, K. King, D. Xu, Z.-P. Liang. “Interventional MRI with sparse sampling: an application of compressed sensing.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 1482. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/01482.pdf>
- C23. D. Hernando[†], P. Kellman, **J. Haldar**[†], Z.-P. Liang. “Estimation of water/fat images, B0 field map and T2* map using VARPRO.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 1517. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/01517.pdf>
- C22. D. Hernando[†], P. Kellman, **J. Haldar**[†], Z.-P. Liang. “Improved field map estimation in the presence of multiple spectral components.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p.3054. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/03054.pdf>
- C21. J. H. Kim, **J. Haldar**[†], Z.-P. Liang, S.-K. Song. “Actively Decoupled Two Coil System Enables in Vivo DTI of Mouse Cervical Spinal Cord at 4.7 T.” *International Society for Magnetic Resonance in Medicine 16th Scientific Meeting*, Toronto, 2008, p. 2304. (Abstract)
<https://cds.ismrm.org/protected/08MProceedings/PDFfiles/02304.pdf>
- C20. K. R. Thulborn, I. C. Atkinson, A. Lu, T. Claiborne, M. P. Flannery, X. J. Zhou, **J. Haldar**[†], Z.-P. Liang. “Metabolic MR Imaging of Human Brains at 9.4 Tesla.” *6th Bi-Annual Minnesota Workshops on High Field MR Imaging and Spectroscopy and MR Imaging of Brain Function*, Minneapolis, 2007. (Abstract)
- C19. S. S. Stone[†], H. Yi[†], **J. P. Haldar**[†], W.-M. W. Hwu, B. P. Sutton, Z.-P. Liang. “How GPUs Can Improve the Quality of Magnetic Resonance Imaging.” *The First Workshop on General Purpose Processing on Graphics Processing Units*, Boston, 2007.
<http://impact.crhc.illinois.edu/shared/workshop/Stone.MRI.GPGPU.Paper.pdf>
- C18. C. L. Shaffer[†], D. Hernando[†], J. Stastny[†], S. Kalyanam, **J. Haldar**[†], E. Chaney, X. Liang[†], M. F. Insana. “Multimodality Imaging Development Using 3D Gel Cultures.” *Biomedical Engineering Society Annual Fall Meeting*, Los Angeles, 2007, p. 374. (Abstract)
- C17. **J. P. Haldar**[†], Z.-P. Liang. “High-Resolution Diffusion MRI.” *29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Lyon, 2007, pp. 311–314.
<http://dx.doi.org/10.1109/IEMBS.2007.4352286>
[Student Paper Competition Geographic Finalist: North America](#)

- C16. **J. P. Haldar**[†], D. Hernando[†], M. D. Budde[†], Q. Wang[†], S.-K. Song, **Z.-P. Liang**. “High-Resolution MR Metabolic Imaging.” *29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Lyon, 2007, pp. 4324–4326.
[Invited Presentation.](#)
<http://dx.doi.org/10.1109/IEMBS.2007.4353293>
- C15. **J. P. Haldar**[†], J. Anderson[†], S.-W. Sun. “Maximum Likelihood Estimation of T1 Relaxation Parameters Using VARPRO.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 41. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/00041.pdf>
- C14. **J. P. Haldar**[†], D. Hernando[†], B. P. Sutton, **Z.-P. Liang**. “Data Acquisition Considerations for Compressed Sensing in MRI.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 829. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/00829.pdf>
- C13. **J. P. Haldar**[†], D. Hernando[†], M. D. Budde[†], Q. Wang[†], S.-K. Song, **Z.-P. Liang**. “High-Resolution Spectroscopic Imaging with Statistical Reconstruction.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 1231. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/01231.pdf>
- C12. **J. P. Haldar**[†], D. Hernando[†], **Z.-P. Liang**. “Estimation of Compartmental Signals from Limited Fourier Samples.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 1910. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/01910.pdf>
- C11. D. Hernando[†], **J. Haldar**[†], B. Sutton, **Z.-P. Liang**. “Removal of Lipid Nuisance Signals in MRSI Using Spatial-Spectral Constraints.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 1244. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/01244.pdf>
- C10. D. Hernando[†], **J. Haldar**[†], J. Ma, **Z.-P. Liang**. “A Linear Prediction Approach to Joint Estimation of Water/Fat Images and Field Inhomogeneity Map.” *Joint Annual Meeting ISMRM-ESMRMB*, Berlin, 2007, p. 1629. (Abstract)
<https://cds.ismrm.org/protected/07MProceedings/PDFfiles/01629.pdf>
- C9. **J. P. Haldar**[†], D. Hernando[†], **Z.-P. Liang**. “Shaping Spatial Response Functions for Optimal Estimation of Compartmental Signals from Limited Fourier Data.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Arlington, 2007, pp. 1364–1367.
<http://dx.doi.org/10.1109/ISBI.2007.357114>
- C8. D. Hernando[†], **J. Haldar**[†], B. Sutton, **Z.-P. Liang**. “Removal of Lipid Signal in MRSI Using Spatial-Spectral Constraints.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Arlington, 2007, pp. 1360–1363.
<http://dx.doi.org/10.1109/ISBI.2007.357113>
- C7. **J. P. Haldar**[†], M. Jacob, A. Ebel, X. Zhu, N. Schuff, D. Hernando[†], B. Sutton, **Z.-P. Liang**. “Constrained Spectroscopic Imaging with Hard and Soft Anatomical Boundary Constraints.” *International Society for Magnetic Resonance in Medicine 14th Scientific Meeting*, Seattle, 2006, p. 3077. (Abstract)
<https://cds.ismrm.org/protected/06MProceedings/PDFfiles/03077.pdf>
- C6. M. Jacob, B. P. Sutton, **J. Haldar**[†], **Z.-P. Liang**. “Improved spectroscopic imaging using echo-planar scans and sparse reconstruction.” *International Society for Magnetic Resonance in Medicine 14th Scientific Meeting*, Seattle, 2006, p. 2964. (Abstract)
<https://cds.ismrm.org/protected/06MProceedings/PDFfiles/02964.pdf>
- C5. **J. P. Haldar**[†], M. Jacob, A. Ebel, X. Zhu, N. Schuff, D. Hernando[†], B. Sutton, **Z.-P. Liang**. “Regularized Inversion of Noisy, Incomplete MR Spectroscopic Imaging Data with Anatomical Prior.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Arlington, 2006, pp. 718–721.
<http://dx.doi.org/10.1109/ISBI.2006.1625017>
- C4. D. Hernando[†], **J. Haldar**[†], **Z.-P. Liang**. “Reduced-Encoding MRI Using Higher-Order Generalized Series.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Arlington, 2006, pp. 29–32.
<http://dx.doi.org/10.1109/ISBI.2006.1624844>
- C3. M. Jacob, B. Sutton, **J. Haldar**[†], **Z.-P. Liang**. “On Model-Based MR Spectroscopic Imaging.” *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, Arlington, 2006, pp. 726–729.
<http://dx.doi.org/10.1109/ISBI.2006.1625019>
- C2. L. Ying, **J. Haldar**[†], **Z.-P. Liang**. “An Efficient Non-Iterative Reconstruction Algorithm for Parallel MRI with Arbitrary K-Space Trajectories.” *27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Shanghai, 2005, pp. 1344–1347.
<http://dx.doi.org/10.1109/IEMBS.2005.1616676>
- C1. **J. P. Haldar**[†], L. Ying, **Z.-P. Liang**. “Lattice Sampling of k-Space for Parallel Imaging.” *International Society for Magnetic Resonance in Medicine 13th Scientific Meeting*, Miami, 2005, p. 2420. (Abstract)
<https://cds.ismrm.org/protected/05MProceedings/PDFfiles/02420.pdf>

PATENTS

- **J. P. Haldar**, R. M. Leahy. “Linear Transform Approach for Processing Diffusion Magnetic Resonance Imaging Data.” US Patent No. 9,880,246.
- B. Zhao, **J. P. Haldar**, L. L. Wald. “Systems and Methods for Designing Magnetic Resonance Fingerprinting Imaging Parameters.” US Patent No. 10,241,173.
- T. H. Kim, **J. P. Haldar**. “Scan-Specific Recurrent Neural Network for Image Reconstruction.” Provisional US patent number 62/879,982. US patent application number 16/939,535.
- **J. P. Haldar**, D. Kim. “Region-Optimized Virtual (ROVir) Coils.” Provisional US patent number 63/127,046. Patent application number PCT/US2021/063138.

ACTIVE RESEARCH SUPPORT

- **NSF CNS-1828736: “MRI: Development of a High-Performance Low-Field MRI for Dynamic Imaging.”**
Division of Computer and Network Systems, National Science Foundation.
Role: Co-Principal Investigator (PIs: K. Nayak/D. Byrd/K. Iskarous/**J. Haldar**/S. Narayanan). 10/2018–09/2023
- **USC MHI: “Image Enhancement for Low-Field MRI.”**
Ming Hsieh Institute for Research on Engineering-Medicine for Cancer, University of Southern California
Role: Principal Investigator (PIs: J. Haldar/J. Acharya). 08/2021–07/2022
- **NIH R01 MH116173 (Impact Score 17; top 3%): “Next Generation In-vivo Diffusion Imaging at Sub Millimeter Resolution.”**
National Institute of Mental Health, National Institutes of Health
Role: Co-Investigator, PI of Subcontract to USC (PIs: K. Setsompop/Y. Rathi). 03/2018–08/2022
- **NIH R01 NS074980 (Impact Score 20; top 5%): “Interactive Software for Semiautomated Analysis of Structural Brain Images.”**
National Institute of Neurological Disorders and Stroke, National Institutes of Health
Role: Co-Investigator (PIs: D. Shattuck/R. Leahy). 04/2017–03/2022
- **NIH U01 HL167613: “Volumetric Real-Time MRI at 0.55 Tesla.”**
National Heart, Lung, and Blood Institute, National Institutes of Health
Role: Co-Investigator (PIs: A. Campbell/K. Nayak). 01/2023–12/2026
- **USC SDRA: “Translational Pipeline for Pediatric and Fetal Applications of 0.55 Tesla MRI.”**
Provost Strategic Directions for Research Award, University of Southern California
Role: Co-Principal Investigator (PIs: K. Nayak/J. Wood/S. Ponrartana/R. Kato/**J. Haldar**/M. Khoo). 12/2021–09/2023

COMPLETED RESEARCH SUPPORT

- **NSF CCF-1350563: “CAREER: Low-Rank Matrix Modeling for Constrained Reconstruction from Noisy and Sparsely-Sampled Data.”**
Communications and Information Foundations Program, National Science Foundation
Role: Principal Investigator. 04/2014–03/2020
- **NIH R21 EB022951 (Impact Score 18; top 3%): “Faster MRI with Sparse Sampling and Low-Rank Modeling.”**
National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health
Role: Principal Investigator. 07/2016–04/2019
- **NIH R01 NS089212 (Impact Score 14; top 2%): “A Brain Atlas for Mapping Connectivity in Focal Epilepsy.”**
National Institute of Neurological Disorders and Stroke, National Institutes of Health
Role: Co-Investigator (PIs: J. Mosher/R. Leahy). 03/2015–02/2021
- **NIH R33 CA225400 (Impact Score 28): “Area B: Precise DCE-MRI Assessment of Brain Tumors.”**
National Cancer Institute, National Institutes of Health
Role: Co-Investigator (PI: K. Nayak). 09/2017–08/2021

- **NIH UL1 RR031986: “Improved DCE Neuro-MRI using Constrained Reconstruction.”**
Southern California Clinical and Translational Science Institute Multidisciplinary Research Project Award
Role: Co-Investigator (PI: K. Nayak). 07/2013–06/2014
- **AFRL FA8650-17-C-9112: “PRISMA: Ptychography-based Rapid Imaging of Nano-Structures with Multi-layer Assemblies.”**
Air Force Research Laboratory
Role: Co-Investigator (PI: J. Damoulakis). 11/2016–02/2022

INVITED TALKS (EXTERNAL)

- “Joint Reconstruction for Diffusion MRI,” Biomedical Magnetic Resonance Laboratory, Washington University in St. Louis School of Medicine, St. Louis, MO, August 10, 2007.
- “High-Resolution Diffusion MRI,” *Annual Conference of the IEEE Engineering in Medicine and Biology Society*, Lyon, France, August 23, 2007. Special session for student paper award finalists.
- “High-Resolution MR Metabolic Imaging,” *Annual Conference of the IEEE Engineering in Medicine and Biology Society*, Lyon, France, August 25, 2007. Special session titled “MRI: Recent Advances in Physiological and Metabolic Imaging.”
- “Data Acquisition Schemes for Compressed Sensing in Magnetic Resonance Imaging,” *Illinois/Missouri Applied Harmonic Analysis Seminar*, Bloomington, IL, April 19, 2008.
- “An Introduction to Magnetic Resonance Imaging,” *Harmonic Analysis and Mathematical Physics Seminar*, Urbana, IL, October 28, 2008.
- “MR Image Reconstruction using GPU-level Parallelism,” *Universal Parallel Computing Research Center Multicore Applications Workshop*, Redmond, WA, May 28, 2009.
- “Accelerating Advanced MR Image Reconstruction using GPUs,” *Virtual School of Computational Science and Engineering Summer School 2009: Many-Core Processors for Science and Engineering Applications*, Urbana, IL, August 10, 2009.
- “Joint Reconstruction of Noisy High-Resolution MR Image Sequences,” Center for Imaging of Neurodegenerative Diseases, San Francisco VA Medical Center, San Francisco, CA, July 6, 2010.
- “Label-Free High-Resolution Imaging of Live Cells With Deconvolved Spatial Light Interference Microscopy,” *Annual Conference of the IEEE Engineering in Medicine and Biology Society*, Buenos Aires, Argentina, September 1, 2010. Special session for student paper award finalists.
- “Magnetic Resonance Imaging and Spectroscopy: Beyond the Fourier Transform,” Electrical and Computer Engineering Graduate Seminar, University of Iowa, Iowa City, IA, March 3, 2011.
- “Toward High-Resolution MR Neuroimaging: Beyond the Fourier Transform,” Ming Hsieh Department of Electrical Engineering, University of Southern California, Los Angeles, CA, March 18, 2011.
- “Low-Rank Approximations for Dynamic Imaging,” *IEEE International Symposium on Biomedical Imaging*, Chicago, IL, March 31, 2011. Special session titled “Compressive Sampling for Biomedical Imaging.”
- “Reconstructing High-Dimensional Signals from Sparsely-Sampled Data using Rank Constraints: Application to Accelerated Magnetic Resonance Imaging,” *Janelia Conference on BioImage Informatics II*, Howard Hughes Medical Institute Janelia Farm Research Campus, Ashburn, VA, September 20, 2011.
- “Some Signal Processing Methods for Faster and Better Diffusion MRI,” *Symposium for Brain Imaging Techniques and Analysis*, National Yang-Ming University, Taipei, Taiwan, June 7, 2012.
- “Constrained Magnetic Resonance Imaging: Denoising and Sparse Sampling,” Research Center for Information Technology Innovation, Academia Sinica, Taipei, Taiwan, June 8, 2012.
- “Magnetic Resonance Image Sequences: Acquisition, Reconstruction, and Analysis.” *NSF IGERT on Video Bioinformatics Fall Retreat*, Lake Arrowhead, CA, October 11, 2014.
[Keynote Lecture](#)
- “Constrained Magnetic Resonance Imaging: Beyond the Fourier Transform.” Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, June 22, 2015.
- “Low-Rank Modeling of Local k-Space Neighborhoods: From Phase and Support Constraints to Structured Sparsity.” *SPIE Wavelets and Sparsity XVI*, San Diego, CA, August 2015. Special session entitled “Sparse Representations in MRI.”

- “Constrained Magnetic Resonance Imaging: Moving Beyond the Fourier Transform using the Blessings of Dimensionality.” *BrainMap Seminar Series*, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital/Harvard-MIT Division of Health Sciences and Technology, Boston, MA, October 21, 2016.
- “Computational imaging with LORAKS: Reconstructing linearly predictable signals using low-rank matrix regularization.” *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 2017. Special session titled “Computational Imaging.”
- “Closing the Loop: Applying Lessons from Big Data to Improve Experiment Design in Behavioral Magnetic Resonance Neuroimaging.” *Society for Brain Mapping & Therapeutics 16th Annual Congress*, Los Angeles, CA, March 2019. Special session titled “Predictive modeling and Big data analytics in Behavioral Neuroscience.”
- “Constrained Magnetic Resonance Imaging and the Blessings of Dimensionality.” *Brain Mapping Center Seminar Series*, Ahmanson-Lovelace Brain Mapping Center, University of California Los Angeles, Los Angeles, CA, April 4, 2019.
<https://youtu.be/O7ND1kdrRs0>
- “Multidimensional diffusion-relaxation correlation spectroscopic imaging.” *ISMRM Member Initiated Symposium on Combined Diffusion-Relaxometry*, Montreal, Canada, May 16, 2019.
- “Optimal Sampling & Reconstruction: Theory and Applications.” *ISMRM Sedona Conference on MR Data Collection and Image Reconstruction*, Sedona, AZ, January 27, 2020.
- My group gave three invited talks (“Beyond MSE and SSIM: More Comprehensive Performance Evaluation of Advanced Image Reconstruction Methods”; “Accelerated MRI Reconstruction Using LORAKS: Leveraging k-space Linear Predictability and Structured Low-rank Modeling to Predict Missing Samples”; and “Diffusion-Relaxation Correlation Spectroscopic Imaging: From experiment design to spatial mapping of microstructure”) at the *Workshop on MRI Acquisition & Reconstruction*, September 7–9, 2021.
- “Thinking Deeply about Image Reconstruction Quality Assessment.” *Third Deep Reconstruction Workshop*, Boston, MA, November 14, 2021.
- “Constrained Reconstruction Approaches to Mitigate Noise at High and Low Fields.” *2nd SoCal Hi-Lo Field Workshop*, Los Angeles, CA, February 26, 2022.
<https://youtu.be/dPQTg4opXMw>

TEACHING

- **Instructor**, EE 483: Introduction to Digital Signal Processing, University of Southern California, Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Fall 2019, Fall 2020, Fall 2021, Spring 2022, Fall 2022. (Course I substantially revised).
- **Instructor**, EE 591: Magnetic Resonance Imaging and Reconstruction, University of Southern California, Fall 2013, Fall 2016. (Course I substantially revised).
- **Instructor**, EE 592: Computational Methods for Inverse Problems, University of Southern California, Fall 2014, Fall 2015, Fall 2017, Spring 2020, Spring 2021, Spring 2023. (Course I created/developed).
- **Instructor** (with K. Nayak), EE 598: Electrical Engineering Research Seminar, University of Southern California, Fall 2013. (Course I created with K. Nayak).
- **Instructor**, EE 599: Vector Space Methods for Signal Processing, University of Southern California, Spring 2013. (Course I created/developed).
- **Guest Lecturer**, ENGR 100a: Engineering Honors Colloquium, University of Southern California, Fall 2022.
- **Guest Lecturer**, EE 301L: Linear Systems, University of Southern California, Fall 2012, Fall 2013.
- **Guest Lecturer**, EE 598: Electrical Engineering Research Seminar, University of Southern California, Fall 2012.
- **Guest Lecturer**, EE 599: Computational Imaging and Brain Connectivity, University of Southern California, Spring 2012.
- **Guest Lecturer**, BME 505aL: Laboratory Projects in Biomedical Engineering, University of Southern California, Fall 2019.
- **Guest Lecturer**, BME 525: Advanced Biomedical Imaging, University of Southern California, Spring 2013, Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2020, Spring 2021.
- **Guest Lecturer**, BME 533: Biomedical Engineering Seminars, University of Southern California, Fall 2012.

- **Guest Lecturer**, NIIN 598: Neuroimaging and Informatics External Speaker Seminar Series, University of Southern California, Fall 2016.
- **Guest Lecturer**, BIOE 120: Introduction to Bioengineering, University of Illinois at Urbana-Champaign, Fall 2007.
- **Guest Lecturer**, ECE 480: Magnetic Resonance Imaging, University of Illinois at Urbana-Champaign, Fall 2005 and Fall 2007.

MENTORING

- Supervised Research

Postdoctoral Research Associates

- Daeun Kim (with R. Leahy). Fall 2019-Fall 2020.
Now a Senior Engineer at Apple.

Ph.D. Students (serving as primary advisor)

- Divya Varadarajan, USC Electrical Engineering. Fall 2013-Summer 2018.
Dissertation: “Novel Theoretical Characterization and Optimization of Experimental Efficiency for Diffusion MRI.”
Now a postdoc at the Martinos Center for Biomedical Imaging, Massachusetts General Hospital/Harvard Medical School.
Selected Awards and Honors while at USC:
 - * 2017 Ming Hsieh Institute PhD Scholar
- Daeun Kim, USC Electrical Engineering. Fall 2013-Summer 2019.
Dissertation: “High-dimensional Magnetic Resonance Imaging of Microstructure.”
Now a Senior Engineer at Apple.
Selected Awards and Honors while at USC:
 - * 2021 ISMRM Junior Fellow
 - * 2020 Electrical and Computer Engineering Best Dissertation Award
 - * 2017 Alfred E. Mann Innovation in Engineering Doctoral Fellowship
 - * 2017 Women in Science and Engineering (WiSE) Merit Award for Current Doctoral Students
 - * 2016 Best Poster Award, USC Ming Hsieh Department of Electrical Engineering Research Festival
- Tae Hyung Kim, USC Electrical Engineering. Fall 2014-Summer 2020.
Dissertation: “Shift-Invariant Autoregressive Reconstruction for MRI.”
Now an Assistant Professor of Computer Engineering at Hongik University.
Selected Awards and Honors while at USC:
 - * 2019 Ming Hsieh Institute PhD Scholar
 - * 2014 USC Annenberg Graduate Fellowship
- Rodrigo Lobos, USC Electrical Engineering. Fall 2015-Fall 2022.
Dissertation: “New Theory and Methods for Accelerated MRI Reconstruction.”
Now a postdoc at the University of Michigan.
Selected Awards and Honors while at USC:
 - * 2021 Ming Hsieh Institute PhD Scholar
 - * 2021 Electrical and Computer Engineering Best Teaching Assistant Award
- Yunsong Liu, USC Electrical Engineering. Fall 2017-Fall 2022.
Dissertation: “Optimization Methods and Algorithms for Constrained Magnetic Resonance Imaging.”
Now a Signal Processing Engineer at Argo AI.
Selected Awards and Honors while at USC:
 - * 2017 USC Viterbi/Graduate School PhD Fellowship
- Jiayang Wang, USC Electrical Engineering. Fall 2018-Present.
Selected Awards and Honors while at USC:

- * 2018 USC Annenberg Graduate Fellowship
- Chin-Cheng Chan, USC Electrical Engineering. Fall 2019-Present.
Selected Awards and Honors while at USC:
 - * 2019 USC Annenberg Graduate Fellowship
- Hao-Ting Kung, USC Electrical Engineering. Fall 2021-Present.
Selected Awards and Honors while at USC:
 - * 2021 USC Viterbi Graduate Fellowship
- Debdut Mandal, USC Electrical Engineering. Fall 2022-Present.
Selected Awards and Honors while at USC:
 - * 2022 USC Viterbi Graduate Fellowship

Ph.D. Students (not as primary advisor)

- Chitresh Bhushan, USC Electrical Engineering (primary advisor: R. Leahy). Fall 2011-Spring 2016.
Dissertation: “Correction, coregistration and connectivity analysis of multi-contrast brain MRI.”
Now a research scientist at GE Global Research.
- Syed Ashrafulla, USC Electrical Engineering (primary advisor: R. Leahy). Fall 2011-Spring 2014.
Dissertation: “Causality and consistency in electrophysiological signals.”
Now a software engineer at Google.
- Yanguang Lin, USC Electrical Engineering (primary advisor: R. Leahy). Fall 2011-Spring 2012.
Dissertation: “Model based PET reconstruction and kinetic parameter estimation.”
Now a Staff Modeling Scientist at Quantcast.

PROFESSIONAL SOCIETIES

- **National Academy of Inventors**, Member
- **International Society for Magnetic Resonance in Medicine**, Member
- **Institute of Electrical and Electronics Engineers**, Senior Member
- **IEEE Engineering in Medicine and Biology Society**, Senior Member
- **IEEE Signal Processing Society**, Senior Member

SERVICE

Technical Committees:

- Chair Elect (Elected Position), Computational Imaging Technical Committee (CI TC), IEEE Signal Processing Society. (Vice Chair 2023. Chair 2024-2025. Past Chair 2026).
- Advisory Member, Computational Imaging Technical Committee (CI TC), IEEE Signal Processing Society, 2022.
- Member (Elected Position), Computational Imaging Technical Committee (CI TC), IEEE Signal Processing Society. (Member 2016-2018, 2019-2021). (This was a Special Interest Group when I first joined, and was elevated to a Technical Committee in 2018)
 - Chair, Nominations and Elections Subcommittee, 2017-2021.
 - Liaison between the CI TC and the BISP TC, 2017-2019.
- Member (Elected Position), Bioimaging and Signal Processing Technical Committee (BISP TC), IEEE Signal Processing Society, 2014-2016, 2017-2019.
- Associate Member (Elected Position), Bioimaging and Signal Processing Technical Committee (BISP TC), IEEE Signal Processing Society, 2011-2013.

MRI Center Administration:

- Member, USC Dynamic Imaging Science Center Management and Oversight Board

- Chair, USC Dynamic Imaging Science Center Technical Advisory Committee
- Member, USC Dana & David Dornsife Cognitive Neuroscience Imaging Center Technical Committee

Awards Committees:

- Member, APSIPA Annual Summit & Conference Awards Committee, 2012
- Member, IEEE ISBI Best Student Paper Selection Committee, 2013
- Member, USC ECE Fellowship Committee (SIPG representative), 2014, 2020, 2021, 2023
- Member, USC Ming Hsieh Institute Ph.D. Scholar Evaluation Committee, 2012
- Member, USC Electrical Engineering Research Festival Judging Committee, 2012, 2013, 2014, 2015, 2016, 2019

Organizing Committees:

- ISMRM Annual Meeting Program Committee Member 2020-2022
 - Educational Table Chair (Acquisition), ISMRM 2022
- IMA Workshop on Computational Imaging, Institute for Mathematics and its Applications, University of Minnesota, 2019 (with S. Chan, J. Fessler, U. Kamilov, S. Ravishankar, R. Willett, and B. Wohlberg)
- Special Session on “Modeling, Optimization, and Machine Learning for Computational Imaging,” Asilomar Conference on Signals, Systems, and Computers 2019 (with S. Ravishankar)
- USC Brain and EE minisymposium, 2015 (with R. Leahy)
- USC Ming Hsieh Distinguished Lecturer Series, 2013-2014 (with K. Chugg, B. Reichardt, P. Bogdan, and P. Georgiou)
- USC Speech MRI Summit, 2014 (with K. Nayak, S. Narayanan, S. Lee, and R. Leahy)
- Special Session on “Biomedical Image Acquisition, Reconstruction, and Quantitation,” APSIPA Annual Summit & Conference 2012 (with R. Leahy and K. Nayak)
- USC Medical Imaging Seminar Series, Fall 2012-Present (with R. Leahy, K. Nayak, and H. Hu)

Session Moderator at International Conferences:

- Allerton Conference on Communication, Control, and Computing 2009
- Annual Conference of the IEEE Engineering in Medicine and Biology Society 2010
- APSIPA Annual Summit & Conference 2012
- Asilomar Conference on Signals, Systems, and Computers 2019
- IEEE International Conference on Image Processing 2021
- IEEE International Symposium on Biomedical Imaging 2012, 2013, 2018, 2020
- International Society for Magnetic Resonance in Medicine Annual Meeting 2013, 2014, 2015, 2016 (two sessions), 2017, 2020, 2021
- ISMRM Workshop on Low Field MRI 2022
- MRI Together Workshop 2021

Editorial Service:

- Senior Area Editor for IEEE Transactions on Computational Imaging, 2021-Present. (Previously Associate Editor from 2018-2021).
- Associate Editor for IEEE Transactions on Medical Imaging, 2014-Present
- Editorial Board Member, Physics in Medicine and Biology, 2016-Present
- ISMRM Annual Meeting Program Committee Member 2020-2022
- Area Chair for IEEE International Conference on Image Processing (ICIP) 2014, 2016, 2018, 2020, 2021, 2022
- Area Chair for IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2017, 2019

Awards for Service:

- 2022 Outstanding Editorial Board Award, IEEE Signal Processing Society, “for outstanding editorial board service for the IEEE Transactions on Computational Imaging”
- 2019 Outstanding Editorial Board Award, IEEE Signal Processing Society, “for outstanding editorial board service for the IEEE Transactions on Computational Imaging”
- Distinguished Reviewer for IEEE Transactions on Medical Imaging 2021, 2022
- Distinguished Reviewer for Magnetic Resonance in Medicine 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019
- Distinguished Reviewer for the Journal of Magnetic Resonance Imaging 2016
- Recognized Reviewer for IEEE International Symposium on Biomedical Imaging 2015

Journal Reviewing:

- | | |
|--|---|
| <ul style="list-style-type: none"> • ACM Computing Surveys • Analytical Chemistry • Biomedical Signal Processing and Control • Computerized Medical Imaging and Graphics • Computers in Biology and Medicine • Concepts in Magnetic Resonance Part A • Concepts in Magnetic Resonance Part B • Europhysics Letters • IEEE/ACM Transactions on Computational Biology and Bioinformatics • IEEE Journal of Selected Topics in Signal Processing • IEEE Signal Processing Letters • IEEE Signal Processing Magazine • IEEE Transactions on Biomedical Engineering • IEEE Transactions on Computational Imaging • IEEE Transactions on Image Processing • IEEE Transactions on Information Technology in Biomedicine • IEEE Transactions on Information Theory • IEEE Transactions on Instrumentation and Measurement • IEEE Transactions on Medical Imaging • IEEE Transactions on Signal Processing • International Journal of Biomedical Imaging • Journal of Magnetic Resonance • Journal of Magnetic Resonance Imaging | <ul style="list-style-type: none"> • Journal of Neuroscience Methods • Journal of Parallel and Distributed Computing • Magnetic Resonance in Medicine • Medical Image Analysis • Medical Physics • Neurocomputing • NeuroImage • NMR in Biomedicine • Optics Express • Parallel Computing • Patterns • Physics in Medicine and Biology • PLOS ONE • Proceedings of the IEEE • Proceedings of the National Academy of Sciences of the United States of America (PNAS) • Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences • Recent Patents on Biomedical Engineering • Scientific Reports • SIAM Journal on Imaging Sciences • Signal, Image and Video Processing • Signal Processing |
|--|---|

Grant Reviewing:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Early Career Reviewer program at the Center for Scientific Review, National Institutes of Health (NIH) • NIH Biomedical Imaging Technology Study Section A (BMIT A), ad hoc reviewer (09/2016, 02/2017). • NIH NIBIB K & R13 Panel, ad hoc reviewer. • NSF Communications and Information Foundations (CIF), Signal Processing Systems Image and Multidimensional Signal Processing (IMDSP) Panel (ad hoc reviewer) • NSF Information and Intelligent Systems (IIS), Information Integration and Informatics (III) Panel (ad hoc reviewer) • NSF Experimental Program to Stimulate Competitive Research (EP-SCoR), Research Infrastructure Improvement (RII) Panel (ad hoc re- | <ul style="list-style-type: none"> viewer) • NSF Communications, Circuits and Sensing Systems (CCSS), Excellence in Research Projects (EiR) Panel (ad hoc reviewer) • Saban Research Institute Inspire Innovation Program (ad hoc reviewer) • Southern California Clinical and Translational Science Institute (SC-CTSI) Technology Awards (ad hoc reviewer) • Israeli Ministry of Science, Technology and Space (ad hoc reviewer) • U.S.-Israel Binational Science Foundation (ad hoc reviewer) • Deutschen Forschungsgemeinschaft (ad hoc reviewer) • Netherlands Organisation for Scientific Research (ad hoc reviewer) • Wellcome Trust (ad hoc reviewer) • Wright Foundation Grant Program (ad hoc reviewer) |
|---|---|

Conference Reviewing:

- | | |
|---|--|
| <ul style="list-style-type: none"> • IEEE Engineering in Medicine and Biology Conference (EMBC) • IEEE Global Conference on Signal and Information Processing (GlobalSIP) • IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) • IEEE International Conference on Image Processing (ICIP) • IEEE International Symposium on Biomedical Imaging (ISBI) • IEEE International Symposium on Information Theory (ISIT) | <ul style="list-style-type: none"> • IEEE International Symposium on Circuits and Systems (ISCAS) • International Society for Magnetic Resonance in Medicine Annual Meeting and Exhibition (ISMRM) • International Conference on Information Processing in Medical Imaging (IPMI) • International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) • Medical Imaging with Deep Learning (MIDL) • Organization for Human Brain Mapping Annual Meeting (OHBM) |
|---|--|

Public Education:

- Developing pedagogical material for highschool students on Signal Processing and Medical Imaging (part of the IEEE Signal Processing Society K-12 Education Outreach Initiative at USC). 2021–Present.

- Scientific consultant and on-screen expert, “How to Build...Everything” television series, Season 1, Episode 12 (“Rock- etship Revealed”). Premiered on the Discovery Science Channel on November 7th, 2016.
<https://www.imdb.com/title/tt6233626/>
- Contributor of scientific visualizations, Permanent Exhibition on “Your Brain,” Franklin Institute Science Museum in Philadelphia. On display from June 2014-Present.
- Instructor, “Magnetic Resonance Imaging: A Glimpse Inside,” Welcome Week Micro-Seminar, USC Undergraduate Programs, 2014.
- Faculty Governing Board Member, Body Engineering Los Angeles GK-12 Program, 2013-2015.

Other Research Education:

- Educational Table Chair (Acquisition), ISMRM 2022.
- Panelist, “Algorithm Breakdown” Secret Session at the 2017 Annual Meeting of the ISMRM. This session provides a forum where junior researchers have an interactive discussion with three panelists who are experienced in the develop- ment, validation, and application of novel MRI-based formulations and algorithms.
- Speaker, UCLA Advanced Neuroimaging Summer Program (NITP), July 2014.
- Speaker, Virtual School of Computational Science and Engineering Summer School 2009: Many-Core Processors for Science and Engineering Applications
- Intel Graduate Research Mentor, Intel Undergraduate Research Scholars Program, 2006.

Open-Source Research Software Development:

- Co-developer of the Illinois Massively Parallel Acceleration Toolkit for Image reconstruction with ENhanced Throug- put in MRI (IMPATIENT MRI) (http://impact.crhc.illinois.edu/mri/mri_toolset.aspx, GPU- based Magnetic Resonance Image Reconstruction Software)
- Co-developer of BrainSuite software (<http://brainsuite.org/>, Magnetic Resonance Image Analysis Tools)
- Developer and distributor of MRI reconstruction software (<http://mr.usc.edu/code.html>) and MRI data (<http://mr.usc.edu/data.html>).

Research Software Training:

- Co-organizer, BrainSuite Training @ USC, October 2015.
- Speaker, BrainSuite Training @ CHLA, August 2014.
- Speaker, BrainSuite Training @ UCLA, November 2013.
- Speaker, BrainSuite Training @ USC, September 2013.

SELECTED PRE-2005 ACADEMIC AWARDS AND HONORS

- **Bronze Tablet Award (University Honors)**, University of Illinois at Urbana-Champaign, Spring 2004.
- **Edmund J. James Scholar Engineering Honors Program**, University of Illinois at Urbana-Champaign, Fall 2000- Spring 2004.
- **James Newton Matthews Scholarship**, University of Illinois at Urbana-Champaign, Fall 2000-Spring 2004.
- **Henry O. Koehler Memorial Scholarship**, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Fall 2003-Spring 2004.
- **Dwight Glasscock Scholarship**, College of Engineering, University of Illinois at Urbana-Champaign, Fall 2003-Spring 2004.
- **McDonnell Memorial Scholarship**, College of Engineering, University of Illinois at Urbana-Champaign, Fall 2002- Spring 2003.
- **Harriet and Robert Perry Scholarship**, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Fall 2002-Spring 2003.
- **Calvin B. Niccols Memorial Scholarship**, College of Engineering, University of Illinois at Urbana-Champaign, Fall 2000-Spring 2002.
- **Award from Accenture and the College of Engineering in recognition of outstanding scholarship, leadership, extra-curricular involvement and professional presence**, University of Illinois at Urbana-Champaign, Spring 2002.