

# Stanford

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## John M. Pauly

Reid Weaver Dennis Professor  
Electrical Engineering

### Bio

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#### BIO

Interests include medical imaging generally, and magnetic resonance imaging (MRI) in particular. Current efforts are focused on medical applications of MRI where real-time interactive imaging is important. Two examples are cardiac imaging, and the interactive guidance of interventional procedures. Specific interests include rapid methods for the excitation and acquisition of the MR signal, and the reconstruction of images from the data acquired using these approaches.

#### ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

#### HONORS AND AWARDS

- Fellow, International Society for Magnetic Resonance in Medicine (2005)
- Fellow, IEEE (2022)
- Gold Medal, International Society of Magnetic Resonance in Medicine (2012)

#### PROFESSIONAL EDUCATION

- PhD, Stanford University (1990)

#### LINKS

- MRSRL Web Site: <http://www-mrsrl.stanford.edu>

### Teaching

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#### COURSES

##### 2025-26

- Analog and Digital Communication Systems: EE 179 (Win)
- Signals and Systems II: EE 102B (Spr)

##### 2024-25

- Medical Image Reconstruction: EE 369C (Aut)
- Signals and Systems II: EE 102B (Spr)
- The Electrical Engineering Profession: EE 100 (Aut)
- The Wireless World, and the Data You Leak: EE 26N (Win)

#### 2023-24

- Analog and Digital Communication Systems: EE 179 (Win)
- Dream It, Build It!: EE 11SC (Sum)
- Medical Imaging Systems II: BMP 269B, EE 369B (Spr)
- RF Pulse Design for Magnetic Resonance Imaging: EE 469B (Aut)
- The Electrical Engineering Profession: EE 100 (Aut)

#### 2022-23

- Dream It, Build It!: EE 11SC (Sum)
- Introduction to Bioimaging: EE 169 (Aut)
- Mechanical Prototyping for Electrical Engineers: EE 64SI (Win)
- Medical Imaging Systems II: BMP 269B, EE 369B (Win)
- The Electrical Engineering Profession: EE 100 (Aut)
- The Wireless World, and the Data You Leak: EE 26N (Win)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

Daniel Abraham, George Alexopoulos, Jaehyeok Bae, Onat Dalmaz, Liliana Edmonds, West Foster, Linus Hein, Renesmee Kuo, Yimeng Lin, Sabrina Liu, William Meng, Favour Nerrise, Chiadika Obinwa, Syamantak Payra, Allan Raventos Knohr, Joanna Sands, Zachary Shah, Karan Singh, Caelia Thomas, Kamila Thompson, Alex Toews, Yonatan Urman, Yuxin Wu, Ridvan Yesiloglu, Xuetong Zhou

### Orals Chair

Jay Qu

### Doctoral Dissertation Advisor (AC)

Lara Arikan, Matt McCready, Irmak Sivgin, Mahmut Yurt

### Master's Program Advisor

Sam Chen, Xinrui Jiang, Rohan Karunaratne, Sonia Kim, Erik Kizior, Yuheng Wu

### Doctoral (Program)

Daniel Abraham, Jaehyeok Bae, Rachel Barcklay, Hasan Atakan Bedel, Onat Dalmaz, Andy Dimnaku, Alisa Hathaway, Bella Hofflich, Wonkyeong Lee, Yimeng Lin, Sabrina Liu, Matt McCready, Deepro Pasha, Karan Singh, Irmak Sivgin, Alex Sun, Alice Tor, Jiaqi Wu, Yuxin Wu, Mahmut Yurt

## Publications

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### PUBLICATIONS

- **OPTIKS: Optimized Gradient Properties Through Timing in  $k$ -Space** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
McCready, M. A., Cao, X., Setsompop, K., Pauly, J. M., Kerr, A. B.  
2026; 45 (4): 1651-1660
- **Semi-supervision for clinical contrast-weighted image synthesis from magnetic resonance fingerprinting.** *Magma (New York, N.Y.)*

- Yurt, M., Alkan, C., Cao, X., Liao, C., Zhou, Z., Cukur, T., Syed, A., Pauly, J., Vasanawala, S., Setsompop, K.  
2026
- **DM-Net: a physics-model-independent direct mapping approach for calibration-free multi-coil MRI.** *Research square*  
Wu, Y., Alkan, C., Oscanoa, J., Sun, A., Setsompop, K., Syed, A., Ma, Y., Liao, C., Alley, M., Zhang, F., Pauly, J., Vasanawala, S.  
2025
  - **Using deep feature distances for evaluating the perceptual quality of MR image reconstructions.** *Magnetic resonance in medicine*  
Adamson, P. M., Desai, A. D., Dominic, J., Varma, M., Bluethgen, C., Wood, J. P., Syed, A. B., Boutin, R. D., Stevens, K. J., Vasanawala, S., Pauly, J. M., Gunel, B., Chaudhari, et al  
2025
  - **A 60-channel high-density flexible receive array for pediatric abdominal MRI.** *Magnetic resonance in medicine*  
Lee, W., Stickle, Y., Follante, C., Grafendorfer, T., Yang, T., Robb, F., Zhang, F., Pauly, J., Scott, G., Vasanawala, S., Syed, A.  
2025
  - **MRI Retrospective Respiratory Gating and Cardiac Sensing by CW Doppler Radar: A Feasibility Study** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*  
Lee, W., Ryu, K., Li, Z., Oscanoa, J., Wu, Y., Robb, F., Vasanawala, S., Pauly, J., Scott, G.  
2025; 72 (1): 112-122
  - **JOINT OPTIMIZATION OF SAMPLING PATTERN AND RECONSTRUCTION FOR DYNAMIC MRI**  
Alkan, C., Oscanoa, J., Zhu, X., Syed, A., Vasanawala, S., Pauly, J., IEEE  
IEEE.2025
  - **AutoSamp: Autoencoding k-space Sampling via Variational Information Maximization for 3D MRI.** *IEEE transactions on medical imaging*  
Alkan, C., Mardani, M., Liao, C., Li, Z., Vasanawala, S. S., Pauly, J. M.  
2024; PP
  - **Missing Wedge Completion via Unsupervised Learning with Coordinate Networks.** *International journal of molecular sciences*  
Van Veen, D., Galaz-Montoya, J. G., Shen, L., Baldwin, P., Chaudhari, A. S., Lyumkis, D., Schmid, M. F., Chiu, W., Pauly, J.  
2024; 25 (10)
  - **Missing Wedge Completion via Unsupervised Learning with Coordinate Networks.** *bioRxiv : the preprint server for biology*  
Van Veen, D., Galaz-Montoya, J. G., Shen, L., Baldwin, P., Chaudhari, A. S., Lyumkis, D., Schmid, M. F., Chiu, W., Pauly, J.  
2024
  - **Adapted large language models can outperform medical experts in clinical text summarization.** *Nature medicine*  
Van Veen, D., Van Uden, C., Blankemeier, L., Delbrouck, J. B., Aali, A., Bluethgen, C., Pareek, A., Polacin, M., Reis, E. P., Seehofnerová, A., Rohatgi, N., Hosamani, P., Collins, et al  
2024
  - **Clinical Text Summarization: Adapting Large Language Models Can Outperform Human Experts.** *Research square*  
Veen, D. V., Uden, C. V., Blankemeier, L., Delbrouck, J. B., Aali, A., Bluethgen, C., Pareek, A., Polacin, M., Reis, E. P., Seehofnerova, A., Rohatgi, N., Hosamani, P., Collins, et al  
2023
  - **Erratum: "Ultra-low-dose PET reconstruction using generative adversarial network with feature matching and task-specific perceptual loss".** *Medical physics*  
Ouyang, J., Chen, K. T., Gong, E., Pauly, J., Zaharchuk, G.  
2023; 50 (9): 5932
  - **Noise2Recon: Enabling SNR-robust MRI reconstruction with semi-supervised and self-supervised learning.** *Magnetic resonance in medicine*  
Desai, A. D., Ozturkler, B. M., Sandino, C. M., Boutin, R., Willis, M., Vasanawala, S., Hargreaves, B. A., Re, C., Pauly, J. M., Chaudhari, A. S.  
2023
  - **Optimization in the space domain for density compensation with the nonuniform FFT.** *Magnetic resonance imaging*  
Dwork, N., O'Connor, D., Johnson, E. M., Baron, C. A., Gordon, J. W., Pauly, J. M., Larson, P. E.  
2023

- **Automated MRI Field of View Prescription from Region of Interest Prediction by Intra-Stack Attention Neural Network.** *Bioengineering (Basel, Switzerland)*  
Lei, K., Syed, A. B., Zhu, X., Pauly, J. M., Vasanawala, S. V.  
2023; 10 (1)
- **SLfRank: Shinnar-Le-Roux Pulse Design with Reduced Energy and Accurate Phase Profiles using Rank Factorization.** *IEEE transactions on medical imaging*  
Ong, F., Zhong, Z., Liao, C., Lustig, M., Vasanawala, S. S., Pauly, J. M.  
2022; PP
- **Deep Learning-Based Water-Fat Separation from Dual-Echo Chemical Shift-Encoded Imaging.** *Bioengineering (Basel, Switzerland)*  
Wu, Y., Alley, M., Li, Z., Datta, K., Wen, Z., Sandino, C., Syed, A., Ren, H., Xing, L., Lustig, M., Pauly, J., Vasanawala, S.  
2022; 9 (10)
- **A Semi-Blind Calibration and Compensation Method for Dynamic Range Recovery of Low-Power Pre-Amplifiers in MRI Receive Chains.** *IEEE transactions on medical imaging*  
Vassos, C., Robb, F., Vasanawala, S., Pauly, J., Scott, G.  
2022; PP
- **Rapid fat-water separated T1 mapping using a single shot radial inversion-recovery spoiled gradient recalled pulse sequence.** *NMR in biomedicine*  
Li, Z., Mathew, M., Syed, A. B., Feng, L., Brunsing, R., Pauly, J. M., Vasanawala, S. S.  
2022
- **A geometry-informed deep learning framework for ultra-sparse 3D tomographic image reconstruction.** *Computers in biology and medicine*  
Shen, L., Zhao, W., Capaldi, D., Pauly, J., Xing, L.  
2022: 105710
- **NeRP: Implicit Neural Representation Learning With Prior Embedding for Sparsely Sampled Image Reconstruction.** *IEEE transactions on neural networks and learning systems*  
Shen, L., Pauly, J., Xing, L.  
2022; PP
- **A Geometry-Informed Deep Learning Framework for Ultra-Sparse 3D Tomographic Image Reconstruction**  
Shen, L., Zhao, W., Pauly, J., Xing, L.  
ELSEVIER IRELAND LTD.2022: S287-S288
- **Novel-view X-ray projection synthesis through geometry-integrated deep learning.** *Medical image analysis*  
Shen, L., Yu, L., Zhao, W., Pauly, J., Xing, L.  
2022; 77: 102372
- **Attention-guided deep learning for gestational age prediction using fetal brain MRI.** *Scientific reports*  
Shen, L., Zheng, J., Lee, E. H., Shpanskaya, K., McKenna, E. S., Atluri, M. G., Plasto, D., Mitchell, C., Lai, L. M., Guimaraes, C. V., Dahmouh, H., Chueh, J., Halabi, et al  
1800; 12 (1): 1408
- **Artifact- and content-specific quality assessment for MRI with image rulers.** *Medical image analysis*  
Lei, K., Syed, A. B., Zhu, X., Pauly, J. M., Vasanawala, S. S.  
1800; 77: 102344
- **Scale-Equivariant Unrolled Neural Networks for Data-Efficient Accelerated MRI Reconstruction**  
Gunel, B., Sahiner, A., Desai, A. D., Chaudhari, A. S., Vasanawala, S., Pilanci, M., Pauly, J.  
edited by Wang, L., Dou, Q., Fletcher, P. T., Speidel, S., Li, S.  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 737-747
- **Unraveling Attention via Convex Duality: Analysis and Interpretations of Vision Transformers**  
Sahiner, A., Ergen, T., Ozturkler, B., Pauly, J., Mardani, M., Pilanci, M.  
edited by Chaudhuri, K., Jegelka, S., Song, L., Szepesvari, C., Niu, G., Sabato, S.  
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2022: 19050-19088

- **Learned Compression of High Dimensional Image Datasets**  
Cole, E., Meng, Q., Pauly, J., Vasanawala, S., IEEE  
IEEE.2022: 1747-1751
- **Utilizing the Wavelet Transform's Structure in Compressed Sensing.** *Signal, image and video processing*  
Dwork, N., O'Connor, D., Baron, C. A., Johnson, E. M., Kerr, A. B., Pauly, J. M., Larson, P. E.  
2021; 15 (7): 1407-1414
- **Biopsy Marker Localization with Thermo-Acoustic Ultrasound for Lumpectomy Guidance.** *Medical physics*  
Dixit, N., Daniel, B. L., Hargreaves, B. A., Pauly, J. M., Scott, G. C.  
2021
- **Multi-Domain Image Completion for Random Missing Input Data** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Shen, L., Zhu, W., Wang, X., Xing, L., Pauly, J. M., Turkbey, B., Harmon, S., Sanford, T., Mehralivand, S., Choyke, P. L., Wood, B. J., Xu, D.  
2021; 40 (4): 1113–22
- **Utilizing the wavelet transform's structure in compressed sensing** *SIGNAL IMAGE AND VIDEO PROCESSING*  
Dwork, N., O'Connor, D., Baron, C. A., Johnson, E. M., Kerr, A. B., Pauly, J. M., Larson, P. E. Z.  
2021
- **Analysis of deep complex-valued convolutional neural networks for MRI reconstruction and phase-focused applications.** *Magnetic resonance in medicine*  
Cole, E. n., Cheng, J. n., Pauly, J. n., Vasanawala, S. n.  
2021
- **Ultra-low-dose 18F-FDG brain PET/MR denoising using deep learning and multi-contrast information**  
Xu, J., Gong, E., Ouyang, J., Pauly, J., Zaharchuk, G.  
edited by Isgum, Landman, B. A.  
SPIE-INT SOC OPTICAL ENGINEERING.2021
- **Deep learning and multi-contrast based denoising for low-SNR Arterial Spin Labeling (ASL) MRI**  
Gong, E., Guo, J., Liu, J., Fan, A., Pauly, J., Zaharchuk, G.  
edited by Isgum, Landman, B. A.  
SPIE-INT SOC OPTICAL ENGINEERING.2021
- **Fast Unsupervised MRI Reconstruction Without Fully-Sampled Ground Truth Data Using Generative Adversarial Networks**  
Cole, E. K., Ong, F., Vasanawala, S. S., Pauly, J. M., IEEE Comp Soc  
IEEE COMPUTER SOC.2021: 3971-3980
- **Wasserstein GANs for MR Imaging: From Paired to Unpaired Training** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Lei, K., Mardani, M., Pauly, J. M., Vasanawala, S. S.  
2021; 40 (1): 105–15
- **Uncertainty Quantification in Deep MRI Reconstruction** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Edupuganti, V., Mardani, M., Vasanawala, S., Pauly, J.  
2021; 40 (1): 239–50
- **Synthesize High-Quality Multi-Contrast Magnetic Resonance Imaging From Multi-Echo Acquisition Using Multi-Task Deep Generative Model** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Wang, G., Gong, E., Banerjee, S., Martin, D., Tong, E., Choi, J., Chen, H., Wintermark, M., Pauly, J. M., Zaharchuk, G.  
2020; 39 (10): 3089–99
- **Rosette Trajectories Enable Ungated, Motion-Robust, Simultaneous Cardiac and Liver T2 \* Iron Assessment.** *Journal of magnetic resonance imaging : JMIR*  
Bush, A. M., Sandino, C. M., Ramachandran, S., Ong, F., Dwork, N., Zucker, E. J., Syed, A. B., Pauly, J. M., Alley, M. T., Vasanawala, S. S.  
2020: e27196
- **Two-dimensional UTE overview imaging for dental application.** *Magnetic resonance in medicine*  
Stumpf, K., Kaye, E., Paul, J., Wundrak, S., Pauly, J. M., Rasche, V.  
2020

- **Multi-scale Unrolled Deep Learning Framework for Accelerated Magnetic Resonance Imaging.** *Proceedings. IEEE International Symposium on Biomedical Imaging*  
Nakarmi, U., Cheng, J. Y., Rios, E. P., Mardani, M., Pauly, J. M., Ying, L., Vasanawala, S. S.  
2020; 2020: 1056–59
- **DIAGNOSTIC IMAGE QUALITY ASSESSMENT AND CLASSIFICATION IN MEDICAL IMAGING: OPPORTUNITIES AND CHALLENGES.** *Proceedings. IEEE International Symposium on Biomedical Imaging*  
Ma, J. J., Nakarmi, U., Kin, C. Y., Sandino, C. M., Cheng, J. Y., Syed, A. B., Wei, P., Pauly, J. M., Vasanawala, S. S.  
2020; 2020: 337-340
- **Multi-scale Unrolled Deep Learning Framework for Accelerated Magnetic Resonance Imaging**  
Nakarmi, U., Cheng, J. Y., Rios, E. P., Mardani, M., Pauly, J. M., Ying, L., Vasanawala, S. S., IEEE  
IEEE.2020: 1052–55
- **Fast variable density Poisson-disc sample generation with directional variation for compressed sensing in MRI.** *Magnetic resonance imaging*  
Dwork, N. n., Baron, C. A., Johnson, E. M., O'Connor, D. n., Pauly, J. M., Larson, P. E.  
2020
- **Compressed Sensing: From Research to Clinical Practice With Deep Neural Networks: Shortening Scan Times for Magnetic Resonance Imaging** *IEEE SIGNAL PROCESSING MAGAZINE*  
Sandino, C. M., Cheng, J. Y., Chen, F., Mardani, M., Pauly, J. M., Vasanawala, S. S.  
2020; 37 (1): 117–27
- **Compressed Sensing: From Research to Clinical Practice with Deep Neural Networks.** *IEEE signal processing magazine*  
Sandino, C. M., Cheng, J. Y., Chen, F., Mardani, M., Pauly, J. M., Vasanawala, S. S.  
2020; 37 (1): 111-127
- **DIAGNOSTIC IMAGE QUALITY ASSESSMENT AND CLASSIFICATION IN MEDICAL IMAGING: OPPORTUNITIES AND CHALLENGES**  
Ma, J. J., Nakarmi, U., Kin, C., Sandino, C. M., Cheng, J. Y., Syed, A. B., Wei, P., Pauly, J. M., Vasanawala, S. S., IEEE  
IEEE.2020: 337–40
- **Ultra-low-dose PET Reconstruction using Generative Adversarial Network with Feature Matching and Task-Specific Perceptual Loss.** *Medical physics*  
Ouyang, J., Chen, K. T., Gong, E., Pauly, J., Zaharchuk, G.  
2019
- **An MRI Compatible RF MEMs Controlled Wireless Power Transfer System** *IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES*  
Byron, K., Winkler, S. A., Robb, F., Vasanawala, S., Pauly, J., Scott, G.  
2019; 67 (5): 1717–26
- **An MRI Compatible RF MEMs Controlled Wireless Power Transfer System.** *IEEE transactions on microwave theory and techniques*  
Byron, K., Winkler, S. A., Robb, F., Vasanawala, S., Pauly, J., Scott, G.  
2019; 67 (5): 1717-1726
- **Evaluation of a Flexible 12-Channel Screen-printed Pediatric MRI Coil** *RADIOLOGY*  
Winkler, S., Corea, J., Lechene, B., O'Brien, K., Bonanni, J., Chaulhari, A., Alley, M., Taviani, V., Grafendorfer, T., Robb, F., Seem, G., Pauly, J., Lustig, et al  
2019; 291 (1): 179–84
- **Evaluation of a Flexible 12-Channel Screen-printed Pediatric MRI Coil.** *Radiology*  
Winkler, S. A., Corea, J., Lechene, B., O'Brien, K., Bonanni, J. R., Chaudhari, A., Alley, M., Taviani, V., Grafendorfer, T., Robb, F., Scott, G., Pauly, J., Lustig, et al  
2019: 181883
- **Data-driven self-calibration and reconstruction for non-cartesian wave-encoded single-shot fast spin echo using deep learning.** *Journal of magnetic resonance imaging : JMIR*  
Chen, F. n., Cheng, J. Y., Taviani, V. n., Sheth, V. R., Brunsing, R. L., Pauly, J. M., Vasanawala, S. S.  
2019

- **Thermo-acoustic ultrasound for noninvasive temperature monitoring at lead tips during MRI.** *Magnetic resonance in medicine*  
Dixit, N. n., Pauly, J. M., Scott, G. C.  
2019
- **Task-GAN: Improving Generative Adversarial Network for Image Reconstruction**  
Ouyang, J., Wang, G., Gong, E., Chen, K., Pauly, J., Zaharchuk, G.  
edited by Knoll, F., Maier, A., Rueckert, D., Ye, J. C.  
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 193–204
- **Accelerated MRI Reconstruction with Dual-Domain Generative Adversarial Network**  
Wang, G., Gong, E., Banerjee, S., Pauly, J., Zaharchuk, G.  
edited by Knoll, F., Maier, A., Rueckert, D., Ye, J. C.  
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 47–57
- **Deep Generative Adversarial Neural Networks for Compressive Sensing MRI** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Mardani, M., Gong, E., Cheng, J. Y., Vasanawala, S. S., Zaharchuk, G., Xing, L., Pauly, J. M.  
2019; 38 (1): 167–79
- **Automatically Determining the Confocal Parameters From OCT B-Scans for Quantification of the Attenuation Coefficients** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Dwork, N., Smith, G. T., Leng, T., Pauly, J. M., Bowden, A. K.  
2019; 38 (1): 261–68
- **Deep residual network for off-resonance artifact correction with application to pediatric body MRA with 3D cones.** *Magnetic resonance in medicine*  
Zeng, D. Y., Shaikh, J. n., Holmes, S. n., Brunsing, R. L., Pauly, J. M., Nishimura, D. G., Vasanawala, S. S., Cheng, J. Y.  
2019
- **Ultra-Low-Dose 18F-Florbetaben Amyloid PET Imaging Using Deep Learning with Multi-Contrast MRI Inputs.** *Radiology*  
Chen, K. T., Gong, E., de Carvalho Macruz, F. B., Xu, J., Boumis, A., Khalighi, M., Poston, K. L., Sha, S. J., Greicius, M. D., Mormino, E., Pauly, J. M., Srinivas, S., Zaharchuk, et al  
2018: 180940
- **Hyperpolarized 13C MRI: Path to Clinical Translation in Oncology.** *Neoplasia (New York, N.Y.)*  
Kurhanewicz, J., Vigneron, D. B., Ardenkjaer-Larsen, J. H., Bankson, J. A., Brindle, K., Cunningham, C. H., Gallagher, F. A., Keshari, K. R., Kjaer, A., Laustsen, C., Mankoff, D. A., Merritt, M. E., Nelson, et al  
2018; 21 (1): 1–16
- **Technique development of 3D dynamic CS-EPSI for hyperpolarized C-13 pyruvate MR molecular imaging of human prostate cancer** *MAGNETIC RESONANCE IN MEDICINE*  
Chen, H., Larson, P. E. Z., Gordon, J. W., Bok, R. A., Ferrone, M., van Criekinge, M., Carvajal, L., Cao, P., Pauly, J. M., Kerr, A. B., Park, I., Slater, J. B., Nelson, et al  
2018; 80 (5): 2062–72
- **Variable-Density Single-Shot Fast Spin-Echo MRI with Deep Learning Reconstruction by Using Variational Networks** *RADIOLOGY*  
Chen, F., Taviani, V., Malkiel, I., Cheng, J. Y., Tamir, J. I., Shaikh, J., Chang, S. T., Hardy, C. J., Pauly, J. M., Vasanawala, S. S.  
2018; 289 (2): 366–73
- **Quantitative susceptibility mapping using deep neural network: QSMnet** *NEUROIMAGE*  
Yoon, J., Gong, E., Chatnuntawech, I., Bilgic, B., Lee, J., Jung, W., Ko, J., Jung, H., Setsompop, K., Zaharchuk, G., Kim, E., Pauly, J., Lee, et al  
2018; 179: 199–206
- **ISLES 2016 and 2017-Benchmarking Ischemic Stroke Lesion Outcome Prediction Based on Multispectral MRI** *FRONTIERS IN NEUROLOGY*  
Winzeck, S., Hakim, A., McKinley, R., Pinto, J. R., Alves, V., Silva, C., Pisov, M., Krivov, E., Belyaev, M., Monteiro, M., Oliveira, A., Choi, Y., Palk, et al  
2018; 9
- **ISLES 2016 and 2017-Benchmarking Ischemic Stroke Lesion Outcome Prediction Based on Multispectral MRI.** *Frontiers in neurology*  
Winzeck, S., Hakim, A., McKinley, R., Pinto, J. A., Alves, V., Silva, C., Pisov, M., Krivov, E., Belyaev, M., Monteiro, M., Oliveira, A., Choi, Y., Paik, et al  
2018; 9: 679

- **Variable-Density Single-Shot Fast Spin-Echo MRI with Deep Learning Reconstruction by Using Variational Networks.** *Radiology*  
Chen, F., Taviani, V., Malkiel, I., Cheng, J. Y., Tamir, J. I., Shaikh, J., Chang, S. T., Hardy, C. J., Pauly, J. M., Vasanaawala, S. S.  
2018; 180445
- **Body diffusion-weighted imaging using magnetization prepared single-shot fast spin echo and extended parallel imaging signal averaging** *MAGNETIC RESONANCE IN MEDICINE*  
Gibbons, E. K., Vasanaawala, S. S., Pauly, J. M., Kerr, A. B.  
2018; 79 (6): 3032–44
- **Rapid compressed sensing reconstruction of 3D non-Cartesian MRI** *MAGNETIC RESONANCE IN MEDICINE*  
Baron, C. A., Dwork, N., Pauly, J. M., Nishimura, D. G.  
2018; 79 (5): 2685–92
- **Deep learning enables reduced gadolinium dose for contrast-enhanced brain MRI.** *Journal of magnetic resonance imaging : JMRI*  
Gong, E., Pauly, J. M., Wintermark, M., Zaharchuk, G.  
2018
- **Thermo-Acoustic Ultrasound for Detection of RF-Induced Device Lead Heating in MRI** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Dixit, N., Stang, P. P., Pauly, J. M., Scott, G. C.  
2018; 37 (2): 536–46
- **Self-Calibrating Wave-Encoded Variable-Density Single-Shot Fast Spin Echo Imaging.** *Journal of magnetic resonance imaging : JMRI*  
Chen, F. n., Taviani, V. n., Tamir, J. I., Cheng, J. Y., Zhang, T. n., Song, Q. n., Hargreaves, B. A., Pauly, J. M., Vasanaawala, S. S.  
2018; 47 (4): 954–66
- **A Wireless Power Transfer System for MRI Scanners**  
Byron, K., Robb, F., Vasanaawala, S., Pauly, J., Scott, G., IEEE  
IEEE.2018
- **Neural Proximal Gradient Descent for Compressive Imaging**  
Mardani, M., Sun, Q., Vasawanaala, S., Pappayan, V., Monajemi, H., Pauly, J., Donoho, D.  
edited by Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.  
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018
- **Advancements in Low-cost, Long Endurance, Altitude Controlled Latex Balloons (ValBal)**  
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