

# Kim, Tae Hyung

Webpage: <https://sites.google.com/view/tae-hyung-kim/>

## Interest

Image Reconstruction, Inverse Problem, Convex / Nonconvex / Constrained Optimization, Magnetic Resonance Imaging (MRI), Medical Imaging, Compressed Sensing, Statistical Signal Processing, and Deep Learning.

## Academic Position

Mar 2022 - Current	<b>Hongik University</b> <b>Department of Computer Engineering</b> <i>Assistant Professor</i>	<b>Seoul, Korea</b>
Oct 2020 - Jan 2022	<b>Athinoula A. Martinos Center for Biomedical Imaging</b> <b>Massachusetts General Hospital / Harvard Medical School</b> <i>Postdoc Research Fellow</i> <ul style="list-style-type: none"><li>• Advisor: Dr. Berkin Bilgic</li></ul>	<b>Boston, MA</b>

## Education

Dec 2020	<b>University of Southern California</b> <i>Ph.D. Electrical Engineering</i> <i>M.S. in Computer Science</i> <ul style="list-style-type: none"><li>• Advisor: Dr. Justin P. Haldar</li></ul>	<b>Los Angeles, CA</b>
Apr 2014	<b>University of Michigan</b> <i>M.S.E. in Electrical Engineering: Systems</i> <i>M.S. in Mathematics</i>	<b>Ann, Arbor, MI</b>
Aug 2011	<b>Korea Advanced Institute of Science and Technology (KAIST)</b> <i>B.S. in Electrical Engineering (Summa Cum Laude)</i>	<b>Daejeon, Korea</b>

## Awards & Honors

- **Magnetic Resonance in Medicine (Journal) Editor's pick, August 2018** (co-1st author)
- **Bioengineering (Journal) Editor's choice articles** (co-author)
- **ISMRM Magna Cum Laude Merit Award** (15% review score) 2015,2016,2017,2021,2022 (1st-author)
- **ISMRM Summa Cum Laude Merit Award** (3% review score) 2017,2021 (co-author)
- **USC MHI Ph.D. Scholar 2019-2020**
- **USC Annenberg Graduate Fellowship** (2yr full support + 2yr TA/RA guarantee) 2014-2018
- **KwanJeong Educational Scholarship** (관정 해외유학 장학생) (full stipend support) 2014-2019
- **Educational Stipend, ISMRM Annual Meeting** 2015, 2016, 2017
- **USC GSG Travel Grant** 2015, 2018
- **USC Annenberg Graduate Travel Award** 2017
- **Korea National Science and Technology Scholarship Fund** 2005-2007, 2009-2011
- **First Prize in Undergraduate Research Participation (URP) Program at KAIST** (highest prize)

## Journal Publications & Top-tier Conferences (†: equal contribution)

1. H. J. Yook, G. S. Jhun, J. H. Cho, M. Jeon, D. Kim, **T. H. Kim**, Y. K. Lee. ZIUM: Zero-Shot Intent-Aware Adversarial Attack on Unlearned Models. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2025. (Accepted)  
<https://arxiv.org/abs/2507.21985>
2. **T. H. Kim**. Zero-Shot Recon2Recon: Data-Free Unsupervised Denoiser Learning for Plug-and-Play Magnetic Resonance Imaging Reconstruction. *IEEE Access*, 13:50590-50602, 2025.  
<https://ieeexplore.ieee.org/document/10933922>
3. U. Yarach, I. Chatnuntawech, C. Liao, S. Teerapittayanon, S. S. Iyer, **T. H. Kim**, J. Haldar, J. Cho, B. Bilgic, Y. Hu, B. Hargreaves, K. Setsompop. Blip-up blip-down circular EPI (BUDA-cEPI) for distortion-free dMRI with rapid unrolled deep learning reconstruction. *Magnetic Resonance Imaging*, 110277, 2025.  
<https://www.sciencedirect.com/science/article/pii/S0730725X24002583>

4. S. H. Kang, J. Kim, J. Cho, C. Z. Cooley, A. Heydari, B. Bilgic<sup>†</sup>, **T. H. Kim<sup>†</sup>**. Enhanced Partial Fourier MRI with Zero-Shot Deep Untrained Priors. *IEEE Access*, 12:182157-182170, 2024  
<https://ieeexplore.ieee.org/document/10771755>
5. J. W. Yoon, H. J. Yook, P. M. Hong, Y. K. Lee<sup>†</sup>, **T. H. Kim<sup>†</sup>**. Orthogonal Transform-Driven Data Augmentation for Limited Gaussian-Tainted Dataset. *IEEE Access*, 12:127272-127282, 2024  
<https://ieeexplore.ieee.org/document/10668869>
6. J. Lee, J. Kim, K. Ryu, M. A. Al-masni, **T. H. Kim**, D. Han, H. G. Kim, D. Kim, JUST-Net: Jointly unrolled cross-domain optimization based spatio-temporal reconstruction network for accelerated 3D myelin water imaging. *Magnetic Resonance in Medicine*, 91:2483-2497, 2024  
<https://onlinelibrary.wiley.com/doi/full/10.1002/mrm.30021>
7. A. Heydari, A. Ahmadi, **T. H. Kim**, B. Bilgic. Joint MAPLE: Accelerated joint T1 and T2\* mapping with scan-specific self-supervised networks. *Magnetic Resonance in Medicine*, 91:2294-2309, 2024  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/mrm.29989>
8. J. Cho, B. Gagoski, **T. H. Kim**, F. Wang, M. K. Manhard, D. Dean III, S. Kecskemeti, A. Caprihan, W. Lo, D. N. Splitthoff, W. Liu, D. Polak, S. Cauley, K. Setsompop, P. E. Grant, B. Bilgic. Time-efficient, high-resolution 3T whole-brain relaxometry using 3D-QALAS with wave-CAIPI readouts. *Magnetic Resonance in Medicine*, 91:630-639, 2024
9. C. Liao, U. Yarach, X. Cao, S. S. Iyer, N. Wang, **T. H. Kim**, Q. Tian, B. Bilgic, A. B. Kerr, K. Setsompop. High-fidelity mesoscale in-vivo diffusion MRI through gSlider-BUDA and circular EPI with S-LORAKS reconstruction. *NeuroImage*, 275:120168, 2023.  
<https://www.sciencedirect.com/science/article/pii/S1053811923003191?via%3Dihub>
10. 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*, 32:e4831, 2023.  
<https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/10.1002/nbm.4831>
11. J. Cho, B. Gagoski, **T. H. Kim**, Q. Tian, S. R. Frost, I. Chatnuntaweck, B. Bilgic. Wave-Encoded Model-based Deep Learning for Highly Accelerated Imaging with Joint Reconstruction. *Bioengineering*, 9:736, 2022. **Editor's Choice Articles**  
<https://www.mdpi.com/2306-5354/9/12/736>
12. **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://link.springer.com/article/10.1007/s11081-021-09604-4>
13. **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://onlinelibrary.wiley.com/doi/10.1002/mrm.27511>
14. 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://ieeexplore.ieee.org/document/8329142/>
15. B. Bilgic<sup>†</sup>, **T. H. Kim<sup>†</sup>**, 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. (20 most read paper in 2017-2018)**  
<https://onlinelibrary.wiley.com/doi/abs/10.1002/mrm.27076>
16. **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://onlinelibrary.wiley.com/doi/10.1002/mrm.26182>

## Conference

---

1. G. S. Jhun, H. J. Yook, J. H. Cho, S. A. Srinivas, C. Z. Cooley, B. Bilgic, and **T. H. Kim**. Electromagnetic Interference Removal In Low-Field MRI Via EDITER, Structured Low-Rank Modeling, And Denoising Diffusion Model, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Honolulu, 2025, p. 4240 (abstract)
2. S. H. Kang, J. Cho, B. Bilgic, and **T. H. Kim**. Zero-Shot Unsupervised Denoiser Learning For Plug-And-Play MRI Reconstruction, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Honolulu, 2025, p. 2609 (abstract)
3. A. Heydari, **T. H. Kim**, Y. Chen, A. Ahmadi, and B. Bilgic. Accelerated T1 And T\*2 Mapping With Scan Specific Unsupervised Networks And Subspace Modeling, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Honolulu, 2025, p. 1106 (abstract, **Power Pitch Oral Presentation**)
4. S. H. Kang, J. Kim, J. Cho, C. Z. Cooley, B. Bilgic, and **T. H. Kim**. Robust Partial Fourier Reconstruction with Zero-shot Deep Untrained Generative Prior, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Singapore, 2024, p. 2805 (abstract)  
<https://archive.ismrm.org/2024/2805.html>
5. A. Heydari, **T. H. Kim**, A. Ahmadi, X. Wang, and B. Bilgic. Fast Joint MR T1 And T2\* Parameter Mapping With Scan Specific Unsupervised Networks, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Singapore, 2024, p. 2781 (abstract)  
<https://archive.ismrm.org/2024/2781.html>
6. A. Roshanzamiran, A. Heydari, **T. H. Kim**, A. Ahmadi, and B. Bilgic. Accelerated Multi-Contrast Parallel Imaging Reconstruction With Implicit Neural Representation, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Singapore, 2024, p. 2810 (abstract)  
<https://archive.ismrm.org/2024/2810.html>
7. J. Cho, Q. Liu, Y. Jun, S. Fujita, X. Yong, **T. H. Kim**, M. Mahmutovic, B. Keil, C. Jaimes, M. S. Gee, S. Huang, and B. Bilgic. Distortion-Free Diffusion Imaging Using BUDA-GSlider On The Connectome 2.0 System, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Singapore, 2024, p. 4435 (abstract)  
<https://archive.ismrm.org/2024/4435.html>
8. **T. H. Kim**, J. Cho, B. Gagoski, Z. Dong, F. Wang, S. H. Kang, and B. Bilgic. Multi-echo MRI Reconstruction with Iteratively Refined Zero-shot Spatio-Temporal Deep Generative Prior, *International Society for Magnetic Resonance in Medicine Annual Meeting*, Toronto, 2023, P. 0828. (abstract, **Power Pitch Oral Presentation**)  
<https://archive.ismrm.org/2023/0828.html>
9. **T. H. Kim**, J. Cho, B. Gagoski, Z. Dong, F. Wang, S. H. Kang, B. Bilgic. Zero-shot Prior Learning of Spatio-temporal Multi-echo/contrast MRI Reconstruction with Iterative Refinement, *ISMRM Workshop on Data Sampling & Image Reconstruction*, 2023. (abstract)  
[https://cds.ismrm.org/protected/Data23/abstracts/Kim\\_Tae\\_Hyung.pdf](https://cds.ismrm.org/protected/Data23/abstracts/Kim_Tae_Hyung.pdf)
10. **T. H. Kim**, J. Cho, B. Zhao, B. Bilgic. Accelerated MR Parameter Mapping with Scan-specific Unsupervised Networks, *The 10th International Congress on Magnetic Resonance Imaging & 27th Annual Scientific Meeting of KSMRM (ICMRI 2022)*. (abstract, **Invited Presentation**)  
<http://ezv.kr/voting/upload/session/1665565796icmri20222.pdf>
11. **T. H. Kim**, J. Cho, B. Zhao, B. Bilgic. Accelerated MR Parameter Mapping With Scan-Specific Unsupervised Networks. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4402. (abstract, online gather town power pitch)  
**Recipient of a Magna Cum Laude ISMRM Merit Award.**  
<https://archive.ismrm.org/2022/4402.html>
12. K.-S. Chan, **T. H. Kim**, B. Bilgic, J. P. Marques. Semi-Supervised Learning For Fast Multi-Compartment Relaxometry Myelin Water Imaging (MCR-MWI). *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 1639. (abstract)  
<https://archive.ismrm.org/2022/1639.html>

13. M. Gao, H. Ye, **T. H. Kim**, Z. Zhang, S. So, B. Bilgic. Accurate Parameter Estimation Using Scan-Specific Unsupervised Deep Learning For Relaxometry And MR Fingerprinting. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4320. (abstract)  
<https://archive.ismrm.org/2022/4320.html>
14. J. Cho , B. Gagoski , **T. H. Kim**, Q. Tian, R. Frost, I. Chatnuntawech, B. Bilgic. Rapid Quantitative Imaging Using Wave-Encoded Model-Based Deep Learning For Joint Reconstruction. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 0435. (abstract)  
<https://archive.ismrm.org/2022/0435.html>
15. J. Cho, **T. H. Kim**, B. Gagoski, Z. Zhang, A. Berman, C. Liao, B. Bilgic. Variable Flip, Blip-Up And -Down Undersampling (VUDU) Enables Motion-Robust, Distortion-Free Multi-Shot EPI. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 0757. (abstract)  
<https://archive.ismrm.org/2022/0757.html>
16. G. Varela-Mattatall, **T. H. Kim**, J. Cho , W.-C. Lo, B. A. Gagoski, R. S. Menon, B. Bilgic. Rapid CS-Wave MPRAGE Acquisition With Automated Parameter Selection. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 1604. (abstract)  
<https://archive.ismrm.org/2022/1604.html>
17. C. Liao, U. Yarach, X. Cao, S. S. Iyer, N. Wang, **T. H. Kim**, B. Bilgic, A. Kerr, K. Setsompop. High-Fidelity Submillimeter-Isotropic-Resolution Diffusion MRI Through GSlider-BUDA And Circular EPI With S-LORAKS Reconstruction. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 0042. (abstract)  
<https://archive.ismrm.org/2022/0042.html>
18. Y. Rathi, J.-F. Nielsen, M. Zaitsev, L. Ning, J.-Y. Chiou, **T. H. Kim**, W. Grissom, B. Gagoski, B. Bilgic. A Vendor-Neutral 3D MP-RAGE Implementation In Pulseseq For Reduced Inter-Site Variability. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 1618. (abstract)  
<https://archive.ismrm.org/2022/1618.html>
19. H.-G. Shin, J. Chen, J. Lee, **T. H. Kim**, J. Cho, G. Varela-Mattatall, B. Gagoski, C. Liu, B. Bilgic. QALAS + QSM: Efficient Multi-Parameter Mapping Allows Disentangling Para- And Dia-Magnetic Contributions In Brain Tissue. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 2465. (abstract)  
<https://archive.ismrm.org/2022/2465.html>
20. U. Yarach, I. Chatnuntawech, C. Liao, S. Teerapittayanon, S. S. Iyer, **T. H. Kim**, J. Cho, B. Bilgic, Y. Hu, B. Hargreaves, K. Setsompop. Rapid Reconstruction Of Blip Up-Down Circular EPI (BUDA-CEPI) For Distortion-Free DMRI Using An Unrolled Network With U-Net As Priors. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4348. (abstract)  
<https://archive.ismrm.org/2022/4348.html>
21. B. Gagoski, J. Cho, Z Zhang, **T. H. Kim**, W.-C. Lo, D. Polak, M. Warntjes, S. Cauley, K. Setsompop, P. E. Grant, B. Bilgic. Time-Efficient, High Resolution 3T Whole Brain Relaxometry Using 3D-QALAS With Wave-CAIPI Readouts. *International Society for Magnetic Resonance in Medicine Annual Meeting*, London, 2022, p. 4388. (abstract)  
<https://archive.ismrm.org/2022/4388.html>
22. **T. H. Kim**, Z. Zhang, J. Cho, B. Gagoski, J. P. 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, **Oral Presentation**)  
**Recipient of a Magna Cum Laude ISMRM Merit Award.**  
<https://index.miramart.com/ISMRM2021/PDFfiles/0224.html>
23. 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, **Oral Presentation**)  
**Recipient of a Summa Cum Laude ISMRM Merit Award.**  
<https://index.miramart.com/ISMRM2021/PDFfiles/0347.html>

24. 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>
25. Z. Zhang, L. Wang, H. G. Shin, J. Cho, **T. H. Kim**, J. Lee, J. Xu, T. Zhang, H. Liu, and B. Bilgic. BUDA-SAGE with unsupervised denoising enables fast, distortion-free, high-resolution T2, T2\*, iron and myelin susceptibility mapping. *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2021, p. 3062. (abstract)  
<https://index.mirasmart.com/ISMRM2021/PDFfiles/3062.html>
26. 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>
27. **T. H. Kim**, J. P. Haldar. Learning how to interpolate Fourier data with unknown autoregressive structure. *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, 2019. (**Invited Presentation**)  
<https://ieeexplore.ieee.org/abstract/document/9048755>
28. **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*, San Diego, 2019. (**Invited Presentation**)  
<https://www.spiedigitallibrary.org/conference-proceedings-of-spie/11138/1113817/Learning-based-computational-MRI-reconstruction-without-big-data--from/10.1117/12.2527584.full?SSO=1>
29. **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 Annual Meeting*, Montreal, 2019. (abstract)  
<https://index.mirasmart.com/ISMRM2019/PDFfiles/4647.html>
30. **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, **Oral Presentation**)  
<http://indexsmart.mirasmart.com/ISMRM2018/PDFfiles/0249.html>
31. 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)  
<http://indexsmart.mirasmart.com/ISMRM2018/PDFfiles/3505.html>
32. **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, DC, 2018. pp. 61–64. (**Oral Presentation**)  
<https://ieeexplore.ieee.org/document/8363523/>
33. 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.  
<https://ieeexplore.ieee.org/document/8335687/>
34. **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, **Oral Presentation**)  
<http://indexsmart.mirasmart.com/ISMRM2017/PDFfiles/1037.html>  
**Recipient of a Magna Cum Laude ISMRM Merit Award**
35. 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)  
<http://indexsmart.mirasmart.com/ISMRM2017/PDFfiles/0449.html>  
**Recipient of a Summa Cum Laude ISMRM Merit Award. Featured with a Power Pitch presentation (hand-selected as one of the 220 most interesting abstracts out of 6,780 submissions to the conference).**

36. **T. H. Kim**, K. Setsompop, J. P. Haldar. SENSE-LORAKS: Phase-Constrained Parallel MRI without Phase Calibration. *International Society for Magnetic Resonance in Medicine 24rd Annual Meeting*, Singapore, 2016. (Abstract, **Oral Presentation**)  
<http://indexsmart.miramsmart.com/ISMRM2016/PDFfiles/1089.html>  
**Recipient of a Magna Cum Laude ISMRM Merit Award**
37. **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>
38. 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>
39. **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, **Oral Presentation**)  
<https://pdfs.semanticscholar.org/de2d/235390c820d0700ce18ab9177c9ed5654bcf.pdf>  
**Recipient of a Magna Cum Laude ISMRM Merit Award**
40. **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. (**Oral Presentation**)  
<http://dx.doi.org/10.1109/ISBI.2015.7163878>
41. M. Wellman, **T. H. Kim**, Q. Duong. Analyzing Incentives for Protocol Compliance in Complex Domains: A Case Study of Introduction-Based Routing. *Workshop on the Economics of Information Security*, Washington, DC, 2013  
<http://www.econinfosec.org/archive/weis2013/papers/WellmanKimDuongWEIS2013.pdf>

## Preprints

---

1. T. Çukur, S. U. Dar, V. A. Nezhad, Y. Jun, **T. H. Kim**, S. Fujita, B. Bilgic. A Tutorial on MRI Reconstruction: From Modern Methods to Clinical Implications. *arXiv preprint arXiv:2507.16715*.  
<https://arxiv.org/abs/2507.16715>
2. A. Heydari, A. Ahmadi, **T. H. Kim**, B. Bilgic. Fast Whole-Brain MR Multi-Parametric Mapping with Scan-Specific Self-Supervised Networks. *arXiv:2408.02988*  
<https://arxiv.org/abs/2408.02988>
3. **T. H. Kim**, P. Garg, J. P. Haldar. LORAKI: Autocalibrated Recurrent Neural Networks for Autoregressive Reconstruction in k-Space. *arXiv:1904.09390*  
<https://arxiv.org/abs/1904.09390>

## Technical Reports

---

1. **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>

## Software Release

---

1. The Fourier Radial Error Spectrum Plot (ESP): Code and Examples  
<http://mr.usc.edu/download/ESP/>
2. LORAKS 2.0: Implementation and Examples  
<http://mr.usc.edu/download/loraks2/>

## Teaching

---

**Project I & II**, Spring 2023, 2024, 2025, Fall 2023, 2024, 2025 (Hongik)  
**Advanced Machine Learning (Undergrad / Grad)**, Spring 2023, 2024, 2025 (Hongik)  
**Digital Media Processing (Grad)**, Spring 2024 (Hongik)  
**Video Image Processing**, Fall 2022, 2023, 2024 (Hongik)  
**C-Programming**, Fall 2022, 2023, 2024 (Hongik)  
**Introduction to Computer Engineering**, Spring 2022 (Hongik)  
**Object-oriented Programming**, Spring 2022 (Hongik)

---

**EE 364 Introduction to Probability and Statistics for EE and CS** (Teaching Assistant), Spring 2020 (USC)

**EE 483 Digital Signal Processing** (Teaching Assistant), Fall 2019 (USC)

**EE 483 Digital Signal Processing** (Teaching Assistant), Spring 2017 (USC)

---

### Reviewer

---

- Magnetic Resonance in Medicine
- Neuroimage
- Medical Physics
- Journal of Magnetic Resonance
- Magnetic Resonance Imaging
- IEEE Transactions on Medical Imaging (IEEE TMI Distinguished Reviewer Silver Level)
- IEEE Transactions on Computational Imaging
- IEEE Transactions on Biomedical Engineering
- IEEE Access
- Neurocomputing
- Applied Soft Computing
- Computers in Biology and Medicine
- International Conference on Acoustics Speech and Signal Processing (ICASSP)
- IEEE International Conference on Image Processing

---

### Patents

---

1. **Tae Hyung Kim**, Justin P. Haldar, Scan-specific recurrent neural network for image reconstruction, (US Patent No. 11,710,261), 2023  
<https://patents.google.com/patent/US11710261B2/>
2. **Tae Hyung Kim**, Nam Hoon Kim, Jin Hong Lee and Jong-Tae Lim, System For Inputting Letter Using Two Dimensional Axis Corresponding Type (Patent No. 10-0893152-0000, KR), 2009  
<https://patents.google.com/patent/KR100893152B1/>

---

### Extracurricular

---

- University of Michigan Korean EECS Association Board Member (Jan 2013 – Dec 2013)
  - USC Korean Graduate Student Association Board Member (Aug 2015 – Jul 2016)
  - Los Angeles Marathon 2017 finisher (42.195 km / 26.2 miles)  
[https://www.trackshackresults.com/lamarathon/results/2017/mar\\_results.php?Link=9&Type=1&Bib=4394](https://www.trackshackresults.com/lamarathon/results/2017/mar_results.php?Link=9&Type=1&Bib=4394)
  - Half Marathon (Pasadena Half Marathon 2016, Dexter-Ann Arbor Run 2012), 10k (Santa Monica Classic 2016), Triathlon sprint course (Millennium Triathlon 2012)
-