

Sevgi Gokce Kafali, Ph.D., Alexander von Humboldt Post-doctoral Fellow

s.kafali@tum.de

EXPERIENCE

Alexander von Humboldt Post-doctoral Fellow at Technical University of Munich <i>hosted by Daniel Rueckert Ph.D.</i>	Munich, Germany 01.10.2025-present
Post-doctoral Researcher at Technical University of Munich <i>supervised by Daniel Rueckert Ph.D.</i>	Munich, Germany 11.11.2024-30.09.2025
University of California, Los Angeles <i>Graduate Research Assistant</i>	Los Angeles, CA, USA 24.09.2018-24.09.2024
Siemens Healthineers <i>Biomedical Engineering PhD Intern</i>	Los Angeles, CA, USA 28.06.2021-21.09.2021
Bilkent University <i>Graduate Research Assistant</i>	Ankara, Turkey 15.02.2015-20.04.2018

EDUCATION

University of California, Los Angeles <i>Ph.D. Candidate in Bioengineering, supervised by Holden H. Wu Ph.D.</i> <i>M.S. in Bioengineering, supervised by Holden H. Wu Ph.D.</i>	Los Angeles, CA, USA 10.07.2020-31.09.2024 24.09.2018-15.06.2020
Bilkent University <i>M.S. in Electrical and Electronics Engineering, supervised by Emine Ulku Saritas Ph.D.</i> <i>B.S. in Electrical and Electronics Engineering</i>	Ankara, Turkey 15.09.2015-20.04.2018 15.09.2011-24.08.2015
University of Erlangen-Nuremberg <i>Electrical and Electronics Engineering, Exchange student</i>	Erlangen, Germany 01.03.2014-01.08.2014

RESEARCH INTERESTS

Medical Image Processing, Artificial Intelligence, Quantitative MRI, MR Image Analysis, MR Image Reconstruction

ACHIEVEMENTS and AWARDS

Exchange Grant (UCLA-TUM collaboration)	BaCaTech	2026-2027
Global Minds Initiative	BMFTR Germany	2025
Trainee Stipend (Monetary Award)	ISMRM MRE Workshop	2022
Pediatric Study Group Best Abstract Finalist	ISMRM	2022
Magna Cum Laude Award (top 15% abstracts)	ISMRM	2017, 2020 (x2), 2022
Travel Grant Award	IEEE ISBI	2020
Bioengineering Department Fellowship	University of California, Los Angeles	2018
Educational Stipend	ISMRM	2016-2018
100% Merit Scholarship for MS studies	Bilkent University	2015-2018
Monthly Stipend for MS studies	Bilkent University	2015-2018
50% Merit Scholarship for BS studies	Bilkent University	2011-2015

JOURNAL PUBLICATIONS

- SG Kafali***, W Zhang*, TR. Adamos, K Kuwahara, A Dong, J Li, S Shih, TI Delgado, S Chowdhury, S Loong, J Moretz, SR Barnes, Z Li, S Ghahremani, KL Calkins, HH Wu. *Cross-Cohort Federated Learning for Pediatric Abdominal Adipose Tissue Segmentation and Quantification Using Free-Breathing 3D MRI*. Radiology Advances. DOI: 10.1093/radadv/umag002 (2026). (*co-first authors)
- SG Kafali**, BD Bolster Jr., S Shih, TI Delgado, V Deshpande, X Zhong, TR. Adamos, S Ghahremani, KL Calkins, HH Wu. *Self-Gated Radial Free-Breathing Liver MR Elastography: Assessment of Technical Performance in Children at 3T*. J Magn Reson Imaging. DOI: 10.1002/jmri.29541 (2024)
- SG Kafali**, S Shih, X Li, GJ Kim, T Kelly, S Chowdhury, S Loong, J Moretz, S Barnes, Z Li, HH Wu. *Automated abdominal adipose tissue segmentation and volume quantification on longitudinal MRI using 3D convolutional neural networks with multi-contrast inputs*, Magn. Reson. Mater. Phys. Biol. Med. DOI: 10.1007/s10334-023-01146-3 (2024) code
- KM Strobel, **SG Kafali**, S Shih, AM Artura, R Masamed, D Elashoff, HH Wu, and KL Calkins. *Pregnancies complicated by gestational diabetes and fetal growth restriction: an analysis of maternal and fetal body composition using magnetic resonance imaging*. J Perinatol. DOI: 10.1038/s41372-022-01549-5 (2022).

5. S Shih, **SG Kafali**, KL Calkins and HH Wu. *Uncertainty-Aware Physics-Driven Deep Learning Network for Free-Breathing Liver Fat and R_2^* Quantification using Self-Gated Stack-of-Radial MRI* Magn Reson Med. DOI: 10.1002/mrm.29525 (2022).
6. BA Barlas, CD Bahadir, **SG Kafali**, U Yilmaz, EU Saritas. *Sheared 2D RF Excitation for Off-resonance Robustness and Fat Suppression in Reduced Field-of-View Imaging* Magn Reson Med. DOI: 10.1002/mrm.29416 (2022).
7. J Story, S Ghahremani, **SG Kafali**, SF Shih, K Kuwahara, KL Calkins, HH Wu. *Using Free-Breathing MRI to Quantify Pancreatic Fat and Investigate Spatial Heterogeneity in Children.* J Magn Reson Imaging. DOI: 10.1002/jmri.28337 (2022).
8. **SG Kafali**, T Armstrong, S Shih, GJ Kim, JL Holtrop, RS Venick, S Ghahremani, BD Bolster Jr., CM Hillenbrand, KL Calkins, HH Wu. *Free-Breathing Radial Magnetic Resonance Elastography of the Liver in Children at 3T: A Pilot Study.* Pediatric Radiology. 52, 1314–1325 DOI: 10.1007/s00247-022-05297-8 (2022).
9. X Zhong, T Armstrong, C Gao, MD Nickel, F Han, BM Dale, X Li, **SG Kafali**, P Hu, HH. Wu, V Deshpande. *Accelerated k -Space Shift Calibration for Free-Breathing Stack-of-Radial MRI Quantification of Liver Fat and R_2^* ,* Magn Reson Med. 87.1: 281-291 DOI: 10.1002/mrm.28981 (2021).
10. **SG Kafali**, T Cukur and EU Saritas. *Phase-Correcting Non-Local Means Filtering for Diffusion Weighted Imaging of the Spinal Cord,* Magn Reson Med. 80.3: 1020-1035 DOI: 10.1002/mrm.27105 (2018).

CONFERENCE PAPERS

1. BN Zeybek, Ö Turgut, J Pan, R Graf, S Starck, D Rueckert, **SG Kafali**. *Opportunistic Cardiac Health Assessment: Estimating Phenotypes from Localizer MRI through Multi-Modal Representations.* International Conference on the Medical Image Computing and Computer Assisted Intervention (MICCAI), (2026) (accepted)
2. W Huang, V, N Stolt-Ansó, N Niessen, M Dannecker, **SG Kafali**, S Kurugol, JA Schnabel, D Rueckert. *Gabor Primitives for Accelerated Cardiac Cine MRI Reconstruction.* International Conference on the Medical Image Computing and Computer Assisted Intervention (MICCAI), (2026) (accepted)
3. **SG Kafali***, L Felsner, H Eichhorn, AAJ Leth, A Batvinskas, A Datchev, F Klemm, J Aulich, P Leepagorn, R Klinger, D Rueckert, JA Schnabel *Master Class on Reproducibility: A Student Hackathon on Advanced MRI Reconstruction Methods,* In BVM Workshop, pp. 146-153. Wiesbaden: Springer Fachmedien Wiesbaden, DOI: 10.1007/978-3-658-51100-5_31(2026). (*co-first authors)
4. **SG Kafali**, S Shih, X Li, S Chowdhury, S Loong, S Barnes, Z Li, HH Wu. *3D Neural Networks for Visceral and Subcutaneous Adipose Tissue Segmentation using Volumetric Multi-Contrast MRI,* 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), pp. 3933-3937, DOI: 10.1109/EMBC46164.2021.9630110 PMID: 34892092. (2021) **(Oral presentation)**
5. SF Shih, **SG Kafali**, T Armstrong, X Zhong, KL Calkins and HH Wu, *Deep Learning-Based Parameter Mapping With Uncertainty Estimation For Fat Quantification Using Accelerated Free-Breathing Radial MRI* 2021 IEEE 18th International Symposium on Biomedical Imaging (ISBI), pp. 433-437, DOI: 10.1109/ISBI48211.2021.9433938. 2021) **(Oral presentation)**
6. **SG Kafali**, S Shih, D Ruan and HH Wu, *Adaptive Locally Low Rank and Sparsity Constrained Reconstruction for Accelerated Dynamic MRI* 2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI), pp. 930-934, DOI: 10.1109/ISBI45749.2020.9098461. (2020) **(Oral presentation, Travel Grant Award)**
7. **SG Kafali**, T Cukur, EU Saritas. *Simultaneous Phase-Correction and Denoising For Diffusion-Weighted MRI,* SIU, Zonguldak, Turkey, p. 1313-1316. DOI: 10.1109/SIU.2016.7495989 (2016) **(Oral presentation)**

CONFERENCE PROCEEDINGS

1. S Starck, V Sideri-Lampretsa, D Junker, M Wu, J Raspe, C Blanken, A Reik, H Hauner, C Holzapfel, D Karampinos, D Rueckert, **SG Kafali**. *Abdominal Fat Fraction Atlases for Longitudinal Mapping of Liver Fat Fat During Weight Loss: Results from the LION Study,* ISMRM, Cape Town, South Africa. (2026). **(Oral presentation)**
2. BN Zeybek, Ö Turgut, J Pan, R Graf, S Starck, D Rueckert, **SG Kafali**. *Opportunistic Assessment of Cardiac Function and Structure from Routine Localizer MRI,* ISMRM, Cape Town, South Africa. (2026). **(Oral presentation)**
3. Y Zhang, **SG Kafali**, D Rueckert, J Pan. *KIMRA: K-space-Image Multimodal Representation Alignment for Comprehensive Cardiac Analysis,* ISMRM, Cape Town, South Africa. (2026). **(Oral presentation)**
4. W Zhang, **SG Kafali**, S Shih, T Adamos, K Kuwahara, A Dong, J Li, TI Delgado, S Ghahremani, KL Calkins, HH Wu. *3D nnU-Net-Based Automated Segmentation of Abdominal Adipose Tissue in Children using Free-Breathing Dixon MRI,* ISMRM, Cape Town, South Africa. (2026).
5. **SG Kafali**, T Adamos, K Kuwahara, AM Dong, J Li, W Zhou, S Shih, TI Delgado, S Govardhan, S Ghahremani, KL Calkins, HH Wu. *Automated Abdominal Adipose Tissue Segmentation and Quantification in Children using Free-Breathing Dixon MRI and 3D Neural Networks,* ISMRM, Hawaii, USA. (2025). **(Oral presentation)**
6. S Shih, **SG Kafali**, TI Delgado, AM Dong, S Ghahremani, KL Calkins, HH Wu. *Liver Fat Quantification in Infants using Free-Breathing Stack-of-Radial MRI and Phase-Corrected Non-Rigid Motion Compensation,* ISMRM, Hawaii, USA. (2025). **(Oral presentation)**
7. TI Delgado, **SG Kafali**, BD Bolster Jr., L Jiang, S Shih, KJ Johnson, PI Leon, MI Altbach, V Deshpande, DS Lu, SB

- Han, KL Calkins, HH Wu. *Assessing the Reliability of SE-EPI MRE for Liver Stiffness Estimation Under Free-Breathing Instruction Compared to Breath-Holding*, ISMRM, Hawaii, USA. (2025).
8. **SG Kafali**, BD Bolster Jr., S Shih, TI Delgado, V Deshpande, X Zhong, TR Adamos, S Ghahremani, KL Calkins, HH Wu. *Improving Self-Gated Radial MR Elastography for Free-Breathing Quantification of Liver Stiffness in Children*, ISMRM, Singapore, p4630, (2024).
 9. **SG Kafali**, BD Bolster Jr., TI Delgado, S Shih, V Deshpande, PI Leon, KJ Johnson, MI Altbach, DS Lu, SB Han, TR. Adamos, S Ghahremani, KL Calkins, HH Wu. *Evaluation of Spin-Echo EPI MR Elastography for Rapid Free-Breathing Quantification of Liver Stiffness*, ISMRM, Singapore, p4796, (2024).
 10. Y Zhang, A Bilgin, **SG Kafali**, B Toner, TI Delgado, E Ahanonu, D Karakay, W Zhou, S Mollus, S Kannengießer, V Deshpande, S Grbic, MI Altbach, HH Wu. *Enhancing MR Liver Vessel Segmentation with Image Translation Techniques*, ISMRM, Singapore, p1398, (2024). **(Oral presentation)**
 11. **SG Kafali**, BD Bolster Jr., S Shih, TI Delgado, V Deshpande, X Zhong, TR. Adamos, S Ghahremani, KL Calkins, HH Wu. *Self-Navigated Rapid Radial Free-Breathing Liver MR Elastography: Assessment of Technical Performance in Children at 3T*, ISMRM, Toronto, p2135, (2023).
 12. S Shih, **SG Kafali**, KL Calkins, HH Wu. *Motion-Resolved Self-Gated Free-Breathing 3D Liver PDFF and $R2^*$ Mapping using Phase-Preserving Beamforming and Non-Rigid Motion Compensation*, ISMRM, Toronto, p0055, (2023). **(Oral presentation)**
 13. TI Delgado, **SG Kafali**, S Shih, TR. Adamos, S Ghahremani, KL Calkins, X Zhong, V Deshpande, BD Bolster Jr., HH Wu. *Image-Space Self-Navigation for Respiratory Motion Compensation in 2D Axial Radial Free-Breathing MRE of the Liver*, ISMRM, Toronto, p1148, (2023). **(Oral presentation)**
 14. **SG Kafali**, BD Bolster Jr., S Shih, GJ Kim, S Ghahremani, KL Calkins, HH Wu. *Radial Free-Breathing Liver MR Elastography in Children using Self-Navigation and Rapid Fractional Encoding*, ISMRM MRE Workshop, Berlin, (2022). **(Oral presentation)**
 15. **SG Kafali**, S Shih, X Li, S Chowdhury, S Loong, S Barnes, Z Li, HH Wu. *Automated Adipose Tissue Segmentation using 3D Attention-Based Competitive Dense Networks and Volumetric Multi-Contrast MRI*, ISMRM, London, p0553, (2022). **(Oral presentation, Magna Cum Laude Award)**
 16. **SG Kafali**, BD Bolster Jr., S Shih, GJ Kim, J Yeh, RS Venick, S Ghahremani, KL Calkins, HH Wu. *Self-Navigated Radial Free-Breathing Magnetic Resonance Elastography of the Liver with Rapid Motion Encoding in Children at 3T*, ISMRM, London, p0121, (2022). **(Oral presentation)**
 17. S Shih, **SG Kafali**, KL Calkins, HH Wu. *Uncertainty-Aware Physics-Driven Deep Learning Network for Fat and $R2^*$ Quantification in Self-Gated Free-Breathing Stack-of-Radial MRI*, ISMRM, London, p4022, (2022). **(Oral presentation)**
 18. H Parish, S Shih, S Ghahremani, **SG Kafali**, KL Calkins, HH Wu. *Quantifying Infant Lean Body Mass using Free-Breathing 3D Stack-of-Radial MRI*, ISMRM, London, p4022, (2022). **(Oral presentation)**
 19. J Story, **SG Kafali**, S Shih, K Kuwahara, KL Calkins, S Ghahremani, HH Wu. *Region-Based Pancreatic Fat Quantification Using Free-Breathing MRI Characterizes Fat Spatial Heterogeneity and is Associated with Insulin Resistance in Overweight Children*, Pediatric Academic Societies, (2022). **(Oral presentation)**
 20. **SG Kafali**, S Shih, X Li, T Armstrong, K Kuwahara, S Govardhan, KV Ly, S Ghahremani, KL Calkins, HH Wu. *A Densely Connected Neural Network with Frequency Balancing Loss for Adipose Tissue Segmentation in Children using Free-Breathing Abdominal MRI*, ISMRM, p2263, (2021).
 21. J Story, **SG Kafali**, S Shih, KL Calkins, S Ghahremani, HH Wu. *Using Free-Breathing MRI to Characterize Heterogeneity of Pancreatic Fat in Children with Nonalcoholic Fatty Liver Disease*, ISMRM, p354, (2021). **(Oral presentation, Magna Cum Laude Award)**
 22. KM Strobel, **SG Kafali**, S Shih, R Masamed, KL Calkins, and HH Wu. *Quantifying Fetal and Maternal Body Composition using 3-D Stack-of-Radial Free-Breathing MRI*, ISMRM, p2278, (2021).
 23. S Shih, **SG Kafali**, T Armstrong, X Zhong, KL Calkins, and HH Wu. *Deep-learning Based Liver Fat and $R2^*$ mapping with Uncertainty Estimation using Self-Gated Free-Breathing Stack-of-Radial MRI*, ISMRM, p3847, (2021).
 24. BA Barlas, CD Bahadir, **SG Kafali**, U Yilmaz, EU Saritas. *Off-resonance Robustness in Reduced FOV Imaging using Sheared 2DRF Excitation*, ISMRM, Virtual conference, p0779, (2021). **(Oral presentation)**
 25. KM Strobel, **SG Kafali**, S Shih, R Masamed, HH Wu, and KL Calkins. *Investigating fetal body composition using magnetic resonance imaging*. Western Society of Pediatric Research (WSPR), Virtual conference, 2021. **(Oral presentation, Abbot David W. Smith Pediatric Trainee Research Award)**
 26. KM Strobel, **SG Kafali**, S Shih, R Masamed, HH Wu, and KL Calkins. *Maternal Adiposity and Gestational Diabetes are Associated with Fetal Liver Fat: A 3-D Free Breathing MRI Study*. Proceedings of the PAS Annual Meeting, (2021).
 27. J Story, **SG Kafali**, S Shih, KL Calkins, S Ghahremani, HH Wu. *A Practical and Accurate Method to Quantify Pancreatic Fat on MRI in Children with Non-Alcoholic Fatty Liver Disease*. Western Society of Pediatric Research (WSPR), Virtual conference, (2021). **(Oral presentation)**
 28. **SG Kafali**, S Shih, X Li, T Armstrong, KV Ly, S Ghahremani, KL Calkins, HH Wu. *Fully Convolutional Networks for Adipose Tissue Segmentation Using Free-Breathing Abdominal MRI in Healthy and Overweight Children*, ISMRM, Virtual conference, p0071, (2020.) **(Oral presentation, Magna Cum Laude Award)**

29. **SG Kafali**, T Armstrong, S Shih, JL Holtrop, RS Venick, S Ghahremani, BD Bolster Jr, CM Hillenbrand, KL Calkins, and HH Wu. *Assessment of Free-Breathing Radial Magnetic Resonance Elastography in Healthy Children and Children with Liver Disease at 3T*, ISMRM, Virtual conference, p0087, (2020). (**Oral presentation, Magna Cum Laude Award**)
30. S Shih, T Armstrong, **SG Kafali**, X Zhong, KL Calkins, HH Wu. *Rapid Free-Breathing Volumetric Liver Fat and $R2^*$ Quantification using Soft-Gating and Sparsity-Promoting Tensor Reconstruction*, ISMRM, Virtual conference, p0330, (2020). (**Oral presentation, Magna Cum Laude Award**)
31. D Cho, **SG Kafali**, S Shih, T Armstrong, S Ghahremani, HH Wu, KL Calkins. *Measuring Infant Body Composition with Free-Breathing MRI*, California Association of Neonatologists (CAN), Coronado, USA, (2020)
32. S Shih, **SG Kafali**, X Li, X Zhong, T Armstrong, HH Wu. *Deep Learning-Based Reconstruction for Radial MRI using Magnitude and Phase Dense U-Nets*, ISMRM Workshop on Data Sampling and Reconstruction, Sedona, USA, (2020)
33. **SG Kafali**, AC Aydinikarahaliloglu, T Cukur and EU Saritas. *Anisotropic Diffusion Filter for Simultaneous Combination and Denoising of Multiple Acquisitions in DWI of the Spinal Cord*, ISMRM, Paris, France, p1626, (2018).
34. **SG Kafali**, T Cukur and EU Saritas. *Joint Non-local Means Reconstruction for Correction of Phase-Induced Errors in Diffusion Tensor Imaging.*, ISMRM, Hawaii, USA, p3332. (2017). (**Magna Cum Laude Award**)
35. **SG Kafali**, T Cukur and EU Saritas. *Phase-correcting Non-local Means Denoising for Diffusion-Weighted Imaging*, ISMRM, Singapore, p2050, (2016).

SKILLS

Programming skills

MATLAB

Python (PyTorch, TensorFlow)

GitHub

Languages

English, Fluent

German, B2 (unofficial), B1 (official certificate)

Turkish, Native

Experimental Skills

Siemens MR scanner operation

DICOM Softwares (Horos, OsiriX, 3D Slicer)

Human Subject Research Training

MR Research in Clinical Settings

ACADEMIC SOCIETIES

International Society in Magnetic Resonance in Medicine (ISMRM)

Institute of Electrical and Electronics Engineers (IEEE)

Institute of Electrical and Electronics Engineers (IEEE) Engineering in Medicine and Biology Society (EMBS)

PROFESSIONAL SERVICE

Reviewer for Journal of Magnetic Resonance Imaging (JMRI)

Reviewer for Journal of Quantitative Imaging in Medicine and Surgery (QIMS)

Reviewer for Scientific Reports - Nature

Reviewer for Nuclear Magnetic Resonance Imaging (NMR) in Biomedicine

Reviewer for ISMRM Annual Meeting Abstracts

Reviewer for MICCAI main conference

Reviewer for MICCAI RIME workshop

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