Dr. Erpeng Dai's research interest is focused on advanced neuro MRI technique development and application. Previously, he has developed a series of novel techniques for high-resolution and fast diffusion MRI (dMRI). Currently, he is mainly working on distortion-free dMRI, advanced diffusion encoding, and brain microstructure and connectivity studies.

**ACADEMIC APPOINTMENTS**
- Instructor, Radiology

**HONORS AND AWARDS**
- Pathway to Independence Awards (K99/R00), National Institutes of Health (NIH) (2023)
- Junior Fellow, the International Society for Magnetic Resonance in Medicine (ISMRM) (2023)
- Magna Cum Laude Awards, ISMRM (2018, 2019)
- Excellent Ph.D. Dissertation Award 2nd places, Tsinghua University (2018)
- Outstanding Research Award, the Overseas Chinese Society for Magnetic Resonance in Medicine (OCSMRM) (2018)
- Pulse Programming Stefan E. Fischer Award, Philips Healthcare (2016)
- Young Investigator Award (YIA), OCSMRM (2016)
- Trainee Travel Stipend, ISMRM (2014, 2015, 2016)

**PROFESSIONAL EDUCATION**
- Postdoc, Stanford University, Radiology (2023)
- PhD, Tsinghua University, Biomedical Engineering (2018)
- BE, Huazhong University of Science and Technology, Biomedical Engineering (2013)

**Publications**

**PUBLICATIONS**
- Frequency-dependent diffusion kurtosis imaging in the human brain using an oscillating gradient spin echo sequence and a high-performance head-only gradient. *NeuroImage*
  Dai, E., Zhu, A., Yang, G. K., Quah, K., Tan, E. T., Fiveland, E., Foo, T. K., McNab, J. A.
  2023: 120328

- Multi-band multi-shot diffusion MRI reconstruction with joint usage of structured low-rank constraints and explicit phase mapping. *Magnetic resonance in medicine*
Dai, E., Mani, M., McNab, J. A.
2022

- **Distortion-Free Diffusion Imaging Using Self-Navigated Cartesian Echo-Planar Time Resolved Acquisition and Joint Magnitude and Phase Constrained Reconstruction** IEEE TRANSACTIONS ON MEDICAL IMAGING
  Dai, E., Lee, P. K., Dong, Z., Fu, F., Setsompop, K., McNab, J. A.
  2022; 41 (1): 63-74

- **High-Resolution Whole-Brain Diffusion MRI at 3T Using Simultaneous Multi-slab (SMSlab) Acquisition.** NeuroImage
  Dai, E., Liu, S., Guo, H.
  2021: 118099

- **Reconstruction for 7T high-resolution whole-brain diffusion MRI using two-stage N/2 ghost correction and L1-SPIRiT without single-band reference.** Magnetic resonance in medicine
  Pan, Z., Ma, X., Dai, E., Auerbach, E. J., Guo, H., Ugurbil, K., Wu, X.
  2023

- **SATuration-recovery and Variable-flip-Angle (SAVA) based three-dimensional free-breathing cardiovascular magnetic resonance T1 mapping at 3T.** NMR in biomedicine
  Guo, R., Si, D., Chen, Z., Dai, E., Chen, S., Herzka, D. A., Luo, J., Ding, H.
  2022: e4755

- **Optimized multi-axis spiral projection MR fingerprinting with subspace reconstruction for rapid whole-brain high-isotropic-resolution quantitative imaging.** Magnetic resonance in medicine
  2022

- **Slab boundary artifact correction in multislab imaging using convolutional-neural-network-enabled inversion for slab profile encoding.** Magnetic resonance in medicine
  2021

- **Improving distortion correction for isotropic high-resolution 3D diffusion MRI by optimizing Jacobian modulation.** Magnetic resonance in medicine
  Liu, S., Xiong, Y., Dai, E., Zhang, J., Guo, H.
  2021

- **A 3D k-space Fourier encoding and reconstruction framework for simultaneous multi-slab acquisition** MAGNETIC RESONANCE IN MEDICINE
  2019; 82 (3): 1012-1024

- **Distortion correction for high-resolution single-shot EPI DTI using a modified field-mapping method** NMR IN BIOMEDICINE
  Xiong, Y., Li, G., Dai, E., Wang, Y., Zhang, Z., Guo, H.
  2019; 32 (9): e4124

- **The effects of navigator distortion and noise level on interleaved EPI DWI reconstruction: a comparison between image- and k-space-based method** MAGNETIC RESONANCE IN MEDICINE
  Dai, E., Zhang, Z., Ma, X., Dong, Z., Li, X., Xiong, Y., Yuan, C., Guo, H.
  2018; 80 (5): 2024-2032

- **eIRIS: Eigen-analysis approach for improved spine multi-shot diffusion MRI** MAGNETIC RESONANCE IMAGING
  Guo, I., Huang, F., Xu, Z., Mei, Y., Fang, W., Ma, X., Dai, E., Guo, H., Feng, Q., Chen, W., Feng, Y.
  2018; 50: 134-140

- **Model-based reconstruction for simultaneous multislice and parallel imaging accelerated multishot diffusion tensor imaging** MEDICAL PHYSICS
  Dong, Z., Dai, E., Wang, F., Zhang, Z., Ma, X., Yuan, C., Guo, H.
  2018; 45 (7): 3196-3204

- **Motion-corrected k-space reconstruction for interleaved EPI diffusion imaging** MAGNETIC RESONANCE IN MEDICINE
  Dong, Z., Wang, F., Ma, X., Dai, E., Zhang, Z., Guo, H.
• A comparison of readout segmented EPI and interleaved EPI in high resolution diffusion weighted imaging MAGNETIC RESONANCE IMAGING
Wang, Y., Ma, X., Zhang, Z., Dai, E., Jeong, H., Xie, B., Yuan, C., Guo, H.
2018; 47: 39-47

• Interleaved EPI diffusion imaging using SPIRiT-based reconstruction with virtual coil compression MAGNETIC RESONANCE IN MEDICINE
Dong, Z., Wang, F., Ma, X., Zhang, Z., Dai, E., Yuan, C., Guo, H.
2018; 79 (3): 1525-1531

• Simultaneous Multislice Accelerated Interleaved EPI DWI Using Generalized Blipped-CAIPI Acquisition and 3D K-Space Reconstruction MAGNETIC RESONANCE IN MEDICINE
Dai, E., Ma, X., Zhang, Z., Yuan, C., Guo, H.
2017; 77 (4): 1593-1605

• Technical Note: Measurement of common carotid artery lumen dynamics using black-blood MR cine imaging MEDICAL PHYSICS
2017; 44 (3): 1105-1112

• Improved multi-shot diffusion imaging using GRAPPA with a compact kernel NEUROIMAGE
Ma, X., Zhang, Z., Dai, E., Guo, H.
2016; 138: 88-99