

Ke Wang

Curriculum Vitae

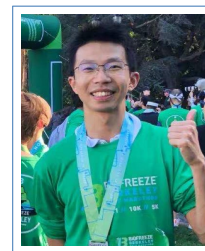
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🏠 Homepage

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Education

- 2018–present **PhD, Electrical Engineering and Computer Sciences, University of California, Berkeley.**
Medical imaging, Magnetic resonance imaging, Computer vision, Signal processing, Inverse problem.
Advisors: [Prof. Michael \(Miki\) Lustig](#) and [Prof. Stella Yu](#)
- 2014–2018 : **Bachelor of Engineering, Biomedical Engineering, Tsinghua University, Summa Cum Laude.**
GPA : 91/100, Ranked 1st/28 in the department of Biomedical Engineering

Publications

Journal Articles and Preprints

- 2020 Jonathan I Tamir, Frank Ong, Suma Anand, Ekin Karasan, **Wang, Ke**, and Michael Lustig. Computational mri with physics-based constraints: Application to multicontrast and quantitative imaging. *IEEE Signal Processing Magazine*, volume 37, pages 94–104. IEEE, 2020.
- 2018 **Wang, Ke**, Han Song, Jiahui Zhang, Xinran Zhang, and Hongen Liao. Reconstruction and registration of large-scale medical scene using point clouds data from different modalities. *arXiv preprint arXiv:1809.01318*, 2018.

In Conference Proceedings

- 2020 **Wang, Ke**, Jonathan I. Tamir, Stella X. Yu, and Michael Lustig. High-fidelity reconstruction with instance-wise discriminative feature matching loss (**Oral**). In *Proc. Intl. Soc. Mag. Reson. Med*, 2020.
- 2020 **Wang, Ke**, Mariya Doneva, Thomas Amthor, Vera C. Keil, Fei Tan, Jonathan I. Tamir, Stella X. Yu, and Michael Lustig. High fidelity direct-contrast synthesis from magnetic resonance fingerprinting in diagnostic imaging (**Oral**). In *Proc. Intl. Soc. Mag. Reson. Med*, 2020.
- 2019 **Wang, Ke**, Frank Ong, Jonathan I. Tamir, and Michael Lustig. Unsupervised learning for improved fidelity multi-contrast mri. In *Proc. Intl. Soc. Mag. Reson. Med*, 2019.
- 2019 **Wang, Ke**, Ekin Karasan, Doneva Mariya, and Michael Lustig. Towards high fidelity direct-contrast synthesis from magnetic resonance fingerprinting. In *NeurIPS 2019 Workshop on Medical Imaging*, 2019.
- 2019 Hao Nan, Aidan Fitzpatrick, **Wang, Ke**, and Amin Arbabian. Non-invasive remote temperature monitoring using microwave-induced thermoacoustic imaging. In *2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pages 6375–6378. IEEE, 2019.
- 2018 **Wang, Ke**, Enhao Gong, Suchandrima Banerjee, and John M. Pauly. Real-time personalized acquisition optimization: 30%-50% reconstruction improvements from a 10-second undersampling optimization. In *Proc. Intl. Soc. Mag. Reson. Med*, 2018.
- 2018 **Wang, Ke**, Zijing Dong, Bingyao Chen, Jiafei Yang, Xing Wei, and Kui. Ying. Ultrafast temperature estimation from undersampled k-space for mr guided microwave ablation. In *Proc. Intl. Soc. Mag. Reson. Med*, 2018.

- 2017 **Wang, Ke**, Fuyixue Wang, Zijing Dong, Bingyao Chen, Jiafei Yang, Xing Wei, and Kui. Ying. Fast temperature estimation using golden angle radial from undersampled k-space for mr guided microwave ablation. In *Proc. Intl. Soc. Mag. Reson. Med*, 2017.

Research Experience

University of California, Berkeley, USA

- Jul,2019 – **High Fidelity Deep Image Reconstruction with Instance-wise Discriminative Feature Matching Loss.**
present
Developing a novel instance-to-instance discriminative feature loss function (UFLoss) for deep MR image reconstruction, which is able to encourage more realistic reconstructed images with more subtle details compared to conventional methods.
Advisors : [Prof. Michael \(Miki\) Lustig](#) and [Prof. Stella Yu](#)
- Oct,2018 – **High Fidelity Direct-Contrast Synthesis from Magnetic Resonance Fingerprinting in Diagnostic Imaging.**
present
Proposing a GAN-based method to learn the mapping from Magnetic Resonance Fingerprinting data directly to synthesized contrast-weighted (T1w, T2w, FLAIR) images.
Advisor : [Prof. Michael \(Miki\) Lustig](#) and [Prof. Stella Yu](#)
- Sep,2018 – **Unsupervised Learning for Improved Fidelity Multi-contrast MRI.**
Dec,2018 Presented an unsupervised learning approach based on convolutional sparse coding for improved fidelity multi-contrast MR reconstruction.
Advisor : [Prof. Michael \(Miki\) Lustig](#)
- Stanford University, USA
- Jun,2017 – **Non-Invasive Remote Temperature Monitoring Using Microwave-Induced Thermoacoustic Imaging.**
Sep,2017
Developed an accurate real-time temperature mapping system using thermoacoustic imaging. Conducted validation experiments using linear-scan and circular-scans. (UGVR program, 18 students selected from China)
Advisor : [Prof. Amin Arbabian](#)
- Jun,2017 – **GPU Accelerated MR Trajectory Optimization.**
Sep,2017 Proposed a trajectory optimization algorithm for MR parallel imaging and compressed sensing. Accelerated optimization process using GPU and C++/MATLAB coding, reducing the computation time from 60 seconds to 5 seconds.
Advisor : [Prof. John M. Pauly](#)
- Tsinghua University, China
- Jan,2018 – **Reconstruction and Registration of Large-Scale Medical Scene Using Point Clouds Data from Different Modalities.**
Jun,2018
Developed reconstruction and registration approaches for 3D point clouds from LiDAR and Kinect, which is able to recover large scale 3D scene from an operating room. **(Best Poster Award in ACCAS 2018)**
Advisor : [Prof. Hongen Liao](#)
- Apr,2016 – **Fast Temperature Estimation for MR Guided Microwave Ablation.**
June,2018 Proposed a fast temperature estimation algorithm based on Multi-baseline method and Referenceless method using Golden Angle Radial trajectories for MR guided HIFU ablation. Conducted phantom experiments and in-vivo experiments to illustrate the effectiveness of the proposed method.
Advisor : [Prof. Kui Ying](#)

Fellowships & Awards

- 2019-present **ISMRM Educational Fellowship**
2018 **Best Poster Award for ACCAS 2018**
2018 **Berkeley EECS Department Fellowship**

- 2018 **Tsinghua Excellent Graduate Honor**
- 2018 **Beijing Excellent Graduate Honor**
- 2015, 2017 **National Scholarship**

Computer skills

- Deep Learning Proficient with PyTorch, TensorFlow
- Programming Languages Proficient with Python, MATLAB, C/C++, Shell script, \LaTeX
- Additional Skills Familiar with MRI reconstruction, GE sequence programming and reconstruction platform

Service

- 2020-present **Reviewer for IEEE Transactions on Circuits and Systems for Video Technology.**

References

Dr. Michael (Miki) Lustig

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Electrical Engineering and Computer Sciences*
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