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My Brief CV:

"Dr. Lai is currently the director of the Biomedical Imaging and Electrophysiology Lab at the University of Electronic Science and Technology of China (UESTC). He received his Ph.D. in Medical Electronics from Fudan University in 2008. Then he completed a three-year Postdoctoral Associate in Biomedical Engineering at the University of Minnesota, USA. From 2012, he has been on the faculty of the School of Electronic Science and Technology, UESTC, China, where he was appointed as an Associate Professor of Electrical Science and Technology. Dr. Lai is members of IEEE and the Engineering in Medicine and Biology Society, and the member of American Heart Associate. He has served as a peer reviewer of *IEEE Transction on Biomedical Egnineering*, *IEEE ACCESS*, and related Chinese Journals. He has publised 30 peer-reviewed papers in *Circulation*, *Physics in Medicine and Biology*, *IEEE Transcation on Information Technology in Biomedicine* etc. and holds 20 Chinese Patents. His research interests and main contributions include computational medicine and deep learning, bioelelctromagnetics and medical applications, automated detection and prediction cardiac/neruo electrical disorder."

My selected publications:

(1) **Dakun Lai**, Xinshu Zhang,, Yifei Zhang, Md Belal Bin Heyat, "Convolutional Neural Network Based Detection of Atrial Fibrillation Combing R-R intervals and F-wave Frequency Spectrum," *41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Berlin, Germany, 2019.

(2) Kefei Ma, **Dakun Lai**, Zichu Chen, Zhuoheng Zeng, Wenjing Chen, and Heng Zhang, "Automatic Detection of High Frequency Oscillations (80-500Hz) based on Convolutional Neural Network in Human Intracerebral Electroencephalogram," *41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Berlin, Germany, 2019.

(3) **Dakun Lai**, Xiaobiao Fan, Qinquan Chen, "A Numerical Evaluation of Multi-Lead Subcutaneous Implantable Cardioverter Defibrillator for Low Energy and Less Damage in Swine," *41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Berlin, Germany, 2019.

(4) **Dakun Lai**, Zenghui Kan, Wenjing Chen, Heng Zhang, "High Frequency Oscillations Detection in Patients Combining Wavelet Decomposition and Back Propagation Neural Network", *IEEE Biomedical Circuits and Systems Conference (BioCAS)*, Cleveland, USA, 2018

(5) Huanhuan Zhang, **Dakun Lai**, Heng Zhang,Wenjing Chen , "DTF-based Analysis of the Epileptic Prediction," *Proceedings of IEEE 9th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics* (CISP-BMEI), 2016.

(6) Liang Mao, **Dakun Lai**, and Qi Xu, "Photoacoustic Imaging:A Potenial New Tool for Diagnosing Vasculogenic Erectile Dysfunction," *Proceedings of IEEE 9th International*

Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI) ,2016.

(7) Qi Xu, **Dakun Lai**, "A novel reconstruction method of magnetoacoustic tomography with magnetic induction based on the amplitude of Lorentz force," *Proceedings of 2016 3rd International Conference on Information Science and Control Engineering (ICISCE)*, 2016.

(8) **Dakun Lai**，Pengye Li，Qi Xi，A Multi-Criteria Evaluation Method for Assessing the Defibrillation Outcome of Different Electrode Placements in Swine，*37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*，Milan，ITALY, 2015.

(9) **Dakun Lai**, Fei Zhang, Cong Wang, A real-time QRS complex detection algorithm based on differential threshold method, *Proceedings for IEEE International Conference on Digital Signal Processing* (DSP), Jul. 2015, pp. 129-133, Singapore, 2015.

(10) Qi Xu, **Dakun Lai**, Piezoelectric Micromachined Ultrasonic Transducers: Modeling and Simulation of Structural Parameters on Transmitting Performance, *Proceedings for IEEE Advanced Information Technology, Electronic and Automation Control Conference*(IAEAC), Chongqing, 2015.

(11) Qi Xu, Bingzhang Chen, Pengye Li, Jin Liu, and **Dakun Lai**, Piezoelectric Micromachined Ultrasonic Transducers for Photoacoustic Imaging: Modeling and Simulation of Structural Parameters on Receive Performance, *X Acoustics Imaging and Sensing*, Vol: 1, pp. 65-72, 2015.

(12) Pengye Li, **Dakun Lai**, Fei Zhang and Ting Feng. Numerical modeling and simulation based on finite element method for internal cardiac defibrillation in a human torso, *Proceedings of 7th IEEE International Conference on BioMedical Engineering and Informatics*, 456-460, 2014.

(13) Fei Zhang, Pengye Li, Fang Jiang, **Dakun Lai**. A shockable rhythm detection algorithm for automatic external defibrillators by combining a slope variability analyzer with a band-pass digital filter. *Proceedings of 2014 IEEE Workshop on Electronics, Computer and Applications*, 828-831, 2014.

(14) **Dakun Lai**, Jian Sun, Yigang Li, Bin He, Usefulness of ventricular endocardial electric reconstruction from body surface maps to noninvasively localize ventricular ectopic activity in patients, *Physics in Medicine and Biology*, 58(11), pp. 3897-3909. 2013. (SCI, IF 2.922)

(15) Long Yu, **Dakun Lai**, Jian Sun, Zhaoye Zhou, Chengzong Han, Yigang Li, Bin He, Noninvasive cardiac activation imaging of premature ventricular contraction in human patients, *Circulation*, Vol 126(21), pp. A13432, 2012.

(16) Zhaoye Zhou, Jorge Pedrón. Torrecilla, Jian Sun, **Dakun Lai**, Yigang Li, Bin He，"Noninvasive Imaging of Activation Sequence and High-frequency Sites During Atrial Arrhythmias in Humans," *The Heart Rhythm Society's 34th Annual Scientific Sessions*, May 2012, pp. S463, Boston, USA ,2012.

(17) **Dakun Lai**, Chenguang Liu, Michael D. Eggen, Paul A. Iaizzo, Bin He, Localization of endocardial ectopic activity by means of noninvasive endocardial surface current density reconstruction, *Physics in Medicine and Biology*, 56(13), pp.4161-4176. 2011.

(18) **Dakun Lai**, Chenguang Liu, Michael D. Eggen, Paul A. Iaizzo, Bin He, Equivalent moving dipole localization of cardiac ectopic activity in a swine model during pacing, *IEEE Transactions on Information Technology in Biomedicine,* 14(6), pp.1318-1326. 2010.

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(20) **Lai Da-kun**, Cao Tao-tao, Fang Zu-xiang, Optimization of electrodes displacement for transthoracic defibrillation: a simulation study spatial configuration pattern, *International Journal of Bioelectromagnetism*, 9(1), pp. 36-37, 2007.

(21) **Dakun Lai**, Taotao Cao, Zuxiang Fang, Modeling and simulation of three orthogonal transthoracic electrical-fields for localization method of intracardiac catheter, *Proceedings for IEEE International Conference on Bioinformatics and Biomedical Engineering* Sep. 2007. pp.1461-1463，Shanghai，China, 2008.