

Weijia Lu is a researcher with two PhDs & Sr. Manager of an innovative team of diverse technical directions; has over 10 years of experiences in data modeling, artificial intelligence application, multiphysics numerical analysis, signal processing, computer visualization and likely; has demonstrated excellence in academic research.



CONTACT

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📍 Shanghai, CN
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🌐 Professional Portal
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SKILLS

Industry

Healthcare ●●●●●●
Automobile ●●●●●●

Leadership & Management

Strategic Planning ●●●●●●
Quality Assurance ●●●●●●
Team Leadership ●●●●●●
Visionary Thinking ●●●●●●

Research & Delivery

Signal Processing ●●●●●●
(e.g. Image, Medical Signal, Text ...)
Deep/Machine Learning ●●●●●●
(e.g. GAN, RL ...)
Compute Architecture ●●●●●●
(e.g. Model Pruning, FL ...)
Physics ●●●●●●
(e.g. FIELD II, Abersim, COMSOL ...)
Software Implementation ●●●●●●
(e.g. Python, C/C++, R, Matlab, GNU Tools, Linux, Docker, HTML, PHP, DevOps ...)
Hardware Design & MCUs ●●●●●●
(e.g. ATmega128, MSP430, 80C51, TDA4)

Languages

Mandarin ●●●●●●
English ●●●●●●

CERTIFICATES

+ JHU certified Data Science Specialization
+ Bk certified Big Data Analysis with Spark
+ GE certified Green Belt of Lean Six Sigma
+ CN Automation certified Mid-Class Eng

WORK HISTORY

📅 08/2019 - Now
📍 UAES, Shanghai, CN
Chief AI Scientist & Sr. Mgr
UAES is No 1. in Driving Technology in China. Its product enclosed EMS, BMS, VCU, VCP, eAxials, TMS so on so forth.

📅 09/2018 - 08/2019
📍 Tencent AI Lab, Shenzhen, CN
Senior Researcher
Lead research on deep learning algorithm for medical pathological diagnosis; 2 SCIE papers, 1 top-rank conference

📅 04/2017 - 09/2018
📍 GE Digital, Shanghai, CN
Staff Data Scientist
Lead research on deep learning algorithm for auto-annotation on physiological signal, predictive maintenance for large healthcare equipment; deliver web platform for radiomics study in hospital; 1 top-rank conference, 1 US patent

📅 05/2012 - 04/2017
📍 GE Global Research, Shanghai, CN
Lead Engineer
Lead research on offshore drilling ultrasonic velocimetry, lift solution optimization for well lifecycle management, detection algorithm & physical modeling for micro-calcifications twinkling study, automation tool for GE controllers; 1 SCIE paper, 1 top-rank conference, 1 CTO award, 3 US patents

📅 09/2010 - 05/2012
📍 Philips Research, Shanghai, CN
Scientist
Research on signal processing algorithm for ultrasound blood velocimetry, and denoising algorithm for motion artifacts on ECG signal; 2 US patents

EDUCATION

📅 05/2008 - 09/2011
📍 University of Aizu, Aizu-Wakamatsu City, JP
PhD of Computer Science
Research on computational model & 3D visualization for cardiac electrophysiological study; 1 SCIE paper, 2 conferences

📅 09/2004 - 06/2009
📍 Fudan University, Shanghai, CN
PhD of Electronic Engineering
Research on epi-cardial mapping system, including its data acquisition hardware, firmware, USB driver, 3D interpolation algorithm; 1 SCIE paper, 1 Chinese top-rank journal paper, 3 conferences

📅 09/1999 - 07/2003
📍 Nanjing University of Sc. and Tec., Nanjing, CN
BSc of Electronic Engineering
Major in radar system and signal processing

ACHIEVEMENTS, HONOURS AND AWARDS


🏆 CTO Physical & Digital Integration Award, GE, 2016
🏆 Best Employee, UAES, 2020
🏆 1st prize of National Machinery Industry Excellent Quality Management, 2022



RECOMMENDATIONS

"...Weijia has developed an excellent reputation within our organization as a dedicated, insightful and easy to work with colleague..." - by Chief Engineer @ GE Ultrasound Probes

PUBLICATIONS


Design and Implementation of a New System for Whole-Atrial Epicardial Mapping



 Cuiwei Yang, **Weijia Lu**, Xiaomei Wu, and Zuxiang Fang

 2007  International Journal of Bioelectromagnetism

 [ADS](#), [arXiv](#)

A New Scheme for Observation and Interpretation Atrial Fibrillation



 **Weijia Lu**, Zuxiang Fang

 2008  in Proceedings of the 2nd International Conference on Bioinformatics and Biomedical Engineering

 [ADS](#), [arXiv](#)

A Visual Expression to Show Epicardial Electrical Activity Comprehensively



 Tou Zhou, **Weijia Lu**, Cuiwei Yang, and Zuxiang Fang

 2008  in Proceedings of the 2nd International Conference on Bioinformatics and Biomedical Engineering

 [ADS](#), [arXiv](#)


Dynamic Epicardial Mapping Using 3D Emulation



 **Weijia Lu**, Tuo Zhou, Cuiwei Yang, and Zuxiang Fang

 2008  in Proceedings of the International Conference on Biomedical Engineering and Informatics

 [ADS](#), [arXiv](#)

Development of Epicardial Mapping System for Study Atrial Fibrillation



 Cuiwei Yang, **Weijia Lu**, Tuo Zhou, Xiaomei Wu, and Zuxiang Fang

 2008  in Proceedings of the International Conference on Biomedical Engineering and Informatics

 [ADS](#), [arXiv](#)

A Method for Real-time Sampling and Smoothly Scrolling in Epicardial Mapping System



 **Weijia Lu**, Cuiwei Yang, and Zuxiang Fang

 2009  Journal of Biomedical Engineering (Chinese), vol.26, pp.1102-1105

 [ADS](#), [arXiv](#)


A Parallel Algorithm for Computer Simulation of Electrocardiogram Based on MPI



 Wenfeng Shen, **Weijia Lu**, Daming Wei, Weimin Xu, Xin Zhu, and Shizhong Yuan

 2009  in Proceedings of 8th IEEE/ACIS International Conference on Computer and Information Science

 [ADS](#), [arXiv](#)


Implementation of a Novel Interpolating Method to Epicardial Potential Mapping for Atrial Fibrillation Study



 **Weijia Lu**, Cuiwei Yang, Zuxiang Fang, Xingpeng Liu, Xin Zhu, and Daming Wei

 2010  Computers in Biology and Medicine, vol.40, pp.456-463

 [ADS](#), [arXiv](#)

A Computer Model Based on Real Anatomy for Electrophysiology Study

 **Weijia Lu**, Daming Wei, Xin Zhu, and Wenxi Chen

 2011  Advances in Engineering Software, vol.42, pp.463-476

 [ADS](#), [arXiv](#)

Method and Device for Detecting Occlusion/Reopening of an Artery and System for Measuring Systolic Blood Pressure

 Yinan Chen, **Weijia Lu**, Jianyi Zhong, Ajay Anand, John Petruzzello

 2012  US 20140180114 A1

 [ADS](#), [arXiv](#)


Computer Simulation of Cathode Ablation for Atrial Fibrillation

 Xin Zhu, Di Yang, **Weijia Lu**, Wenxi Chen, Daming Wei, Koji Fukuda, and Hiroaki Shimokawa

 2014  in Proceedings of 14th IEEE International Conference on Computer and Information Technology

 [ADS](#), [arXiv](#)


Method to Develop Coded Excitation for Velocimetry in Downhole Drilling

 **Weijia Lu**, Ran Niu, Longtao Yuan, Xin Qu, Heng Wu, Jing Ye

 2015  in Proceedings of 15th IEEE International Conference on Computer and Information Technology

 [ADS](#), [arXiv](#)


Dominant Factor Analysis of B-flow Twinkling Sign with Phantom and Simulation Data

 **Weijia Lu**, Bruno Haider

 2017  Journal of Medical Ultrasonics, vol.44, pp.37-50

 [ADS](#), [arXiv](#)


Sensing Systems and Methods for Detecting Changes in Downhole Hydrocarbon and Gas Species

 **Weijia Lu**, Yi Liao

 2017  WO2018170838A1

 [ADS](#), [arXiv](#)

































































Method to Annotate Arrhythmias by Deep Network

 **Weijia Lu**, Jie Shuai, Shuyan Gu, Joel Xue


 2018  in Proceedings of 18th IEEE International Conference on Computer and Information Technology

 [ADS](#), [arXiv](#)

New Boundary Constraint Loss to Facilitate Glands Segmentation

-  **Weijia Lu**, Jianhua Yao, Xiao Han, Haocheng Shen
 2019  Journal of Medical Imaging and Medical Informatics 
- An Attentive Pruning Method for Edge Computing**
 Yang Gao, Hao Gong, **Weijia Lu**, Chen Su, Zhang Ni and Qinghua Wang
 2019  in Proceedings of 20th International Conference on Machine Learning and Computing 
- System and Method for Identifying Cardiac Arrhythmias With Deep Neural Networks**
 **Weijia Lu**, Shuyan Gu, Joel Xue, Jie Shuai, Hu Lifei
 2020  US20200178825 
- Development and interpretation of a pathomics-based model for the prediction of microsatellite instability in Colorectal Cancer**
 Cao Rui, Fan Yang, Si-Cong Ma, Li Liu, Yu Zhao, Yan Li, Dehua Wu, Tongxin Wang, **Weijia Lu**, Wei-Jing Cai, Hong-bo Zhu, Xue-Jun Guo, Yuwen Lu, Jun-jie Kuang, Wenjing Huan, Wei-min, Tang, Kun Huang, Junzhou Huang, Jianhua Yao and Zhong-Yi Dong
 2020  Theranostics 
- Microsatellite Instability Prediction of Uterine Corpus Endometrial Carcinoma Based on HE Histology Whole-Slide Imaging**
 Tongxin Wang, **Weijia Lu**, Fan Yang, Li Liu, Zhong-Yi Dong, Weimin Tang, Jia Chang, Wenjing Huan, Kun Huang and Jianhua Yao
 2020  in Proceedings of IEEE 17th International Symposium on Biomedical Imaging 
- Processing Methods, Devices, Equipment and Storage Media for Vehicle Data**
 Peng Liu, **Weijia Lu**, Bingyang Li, Hao Gong, Jie Zhuang and Tao Song
 2020  CN202011480936.0 
- Construction Method, Device and Storage Medium for Engine Exhaust System Temperature Model**
 Bingyang Li, Hao Gong, **Weijia Lu**, Peng Liu, Chunshan Ma, Yang Wang, Jianqiang Wang and Zhiwei Wang
 2021  CN202110499356.4 
- Dual Batch Size Training: An efficient MGD adaptive batch size method**
 Yuhang Du, Wenfeng Shen, Baohua Liu, **Weijia Lu** and Hao Gong
 2021  in Proceedings of 2021 IEEE 33rd International Conference on Tools with Artificial Intelligence 
- Method, Device and Storage Medium of PCB Welding Defect Detection**
 **Weijia Lu**, Peng Liu, Bingyang Li, Chuang Liu, Wei Shen, Huan Ge, Yu Jing, Jie Zhang, Qi Wang and Yu Cao
 2021  CN202110622967.3 
- Method, Device and Storage Medium of Image Recognition for Chip Welding Defect**
 Peng Liu, **Weijia Lu**, Bingyang Li, Chuang Liu, Tong Ma and Fayu Qian
 2021  CN202110992821.8 
- Using EBGAN for Anomaly Intrusion Detection**
 Yi Cui, Wenfeng Shen, Jian Zhang, **Weijia Lu**, Chuang Liu, Lingge Sun and Sisi Chen
 2022  in Proceedings of 2022 International Joint Conference on Neural Networks 
- Knock detection method and device for PCSP ignition strategy**
 Xiaofeng Ma, **Weijia Lu**, Gang Xi and Jianqiang Wang
 2022  CN 114781425 A 
- Gradient-Based Meta-Learning Using Uncertainty to Weigh Loss for Few-Shot Learning**
 Lin Ding, Wenfeng Shen, **Weijia Lu**, Peng Liu and Shengbo Chen
 2023  in Proceedings of ICCECE 
- Towards Designing an Attentive Deep Trajectory Predictor Based on Bluetooth Low Energy Signal**
 **Weijia Lu**, Xiaofeng Ma, Xiaodong Zhang, Zhifei Yang and Qinghua Wang
 2023  in Proceedings of 57th Annual Conference on Information Sciences and Systems 
- Distributed Training Methods and Systems for Models**
 **Weijia Lu**, Xiaodong Zhang, Zhifei Yang, Xiaofeng Ma, Chuang Liu and Wangchen Lin
 2023  CN 116822619 A 
- A Method for Automatic Capacity Allocation**
 Shuyu Jiang, **Weijia Lu**, Na Li, Huan Ge and Bingyang Li
 2023  CN 116384669 A 


A Power Battery Balancing Controller, Balancing Control Method, and Electric Vehicle

 Chuang Liu, Xichun Ke, Zhifei Yang, **Weijia Lu**, Xiaodong Zhang and Xiang Di

 2023  CN 116674432 A

 [ADS](#), [arXiv](#)


A Reinforcement Learning-based Battery Balancing Method and Device

 Zhifei Yang, Xichun Ke, Chuang Liu, **Weijia Lu**, Xiaodong Zhang and Xiang Di

 2023  CN 116767024 A

 [ADS](#), [arXiv](#)


A Curve Information Processing Method, Device, Storage Medium, and Detection Equipment

 Peng Liu, Lin Sun, **Weijia Lu** and Tong Ma

 2023  CN 115631139 A

 [ADS](#), [arXiv](#)


A Target Detection Method, Device, Storage Medium, Sensor, and Controller

 Peng Liu, **Weijia Lu**, Lin Sun, Can Zhang and Tong Ma

 2023  CN 116452916 A

 [ADS](#), [arXiv](#)

A Target Detection Method, Machine Vision Device, Storage Medium, and Controller



 Peng Liu, Lin Sun, **Weijia Lu**, Jie Zhang, Wei Shen, Yu Jin and Huan Ge

 2024  CN 117726855 A

 [ADS](#), [arXiv](#)


A Comfortable and Robust DRL-based Car-following Policy Incorporating Lateral Information under Cut-in Scenarios



 Yifei Shen, Zhifei Yang, **Weijia Lu**, Wenfeng Shen, Zhou Lei


 2024  in Proceedings of 35th IEEE Intelligent Vehicles Symposium

 [ADS](#), [arXiv](#)


Improving Generalization and Personalization in Long-Tailed Federated Learning via Classifier Retraining



 Yuhang Li, Liu Tong, Wenfeng Shen, Yangguang Cui, **Weijia Lu**

 2024  in Proceedings of 30th International European Conference on Parallel and Distributed Computing

 [ADS](#), [arXiv](#)

Scenario-Aware Clustered Federated Learning for Vehicle Trajectory Prediction with Non-IID Data

 Liang Tao, Yangguang Cui, Xiaodong Zhang, Wenfeng Shen, **Weijia Lu**

 2024  Part D: Journal of Automobile Engineering

 [ADS](#), [arXiv](#)