Long Wang

CONTACT
INFORMATION

Department of Computer Science and Technology,
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Beijing, China

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RESEARCH
INTERESTS

I am interested in machine learning, computer vision and their applications in renewable energy. I have focused on developing deep learning based anomaly detection approaches for complex systems, such as wind turbines. Meanwhile, I have worked on developing computer vision algorithms for object detection based on UAV-taken images.

WORK
EXPERIENCE

University of Science and Technology Beijing

Associate Professor 2017-now
Teach both undergraduate and graduate courses and supervise research students.
Postgraduate Level:
- Evolutionary Computation

Undergraduate Level:
- Database Systems Concept

City University of Hong Kong

Teaching Assistant 2015-2016
Duties at various times have included teaching tutorials, office hours, and leading weekly computer lab exercises.
Postgraduate Level:
- SEEM 6015 Supply Chain Management, Semester A 2015/16, Class Size: 85

Undergraduate Level:
- SEEM 4025 Quality Systems & Management, Semester B 2015/16, Class Size: 30
- SEEM 3040 Engineering Database & Systems, Semester A 2016/17, Class Size: 18

China Agricultural University

Research Assistant 2011-2013
Advisor: Prof. Peiling Yang
Developed a neural network based model to forecast soil moisture based on historical data and weather information.
Worked as the IT-supporter in the Soil-physics Lab

China Longyuan Power Group Corporation Ltd., Beijing, China

Summer Intern Summer 2015
Mentor: Jia Xu
Developed and implemented a data-driven framework for monitoring wind turbine power generation performance

Parensoc Ltd., London, UK

Summer Intern Summer 2014
Mentor: Mital Kinderkhedia

Developed both the front-end and the back-end of a social networking website. The project included user interface design, database design, and friend recommendation algorithm development.

EDUCATION	**City University of Hong Kong**	2014-2017
	Ph.D. in Systems Engineering and Engineering Management	Supervisor: Dr. Zijun Zhang

University College London (UCL) 2013-2014
M.Sc. in Computer Science, *Distinction* Dissertation Supervisor: Dr. Kevin Bryson

China Agricultural University 2011-2013
M.Eng. in Hydraulic Engineering Supervisor: Professor Peiling Yang

China Agricultural University 2007-2011
B.Eng. in Irrigation and Drainage Engineering, *GPA: 3.81/4.00*

AWARDS AND SCHOLARSHIPS

Hong Kong PhD Fellowship	2014-2017
Research Tuition Scholarship	2015-2016
Chow Yei Ching School of Graduate Studies Entrance Scholarships	2014-2015
Outstanding Graduates of Beijing	2013
Outstanding Graduates of China Agricultural University	2013
Excellent All-round Student of Beijing	2011
First Class Scholarship for Academic Excellence	2010
Excellent All-round Student of China Agricultural University	2010
Samsung Scholarship for Agricultural Talents	2010
Second Class Scholarship for Academic Excellence	2009
Excellent All-round Student of China Agricultural University	2009
National Encouragement Scholarship	2009
First Class Scholarship for Academic Excellence	2008
Excellent All-round Student of China Agricultural University	2008
National Encouragement Scholarship	2008

RESEARCH PROJECT

"Machine Learning Based Wind Turbine Condition Monitoring"
Sponsored by the Fundamental Research Funds for the Central Universities
Year: 2017-2020
PI: **Long Wang**

"Inferring User Interests from Social Images and Tags"
Sponsored by the University of Science and Technology Beijing National Taipei University of Technology Joint Research Program
Year: 2018
PI: **Long Wang**

"Wind Turbine Generation Performance Monitoring and Scheduling Optimization"
Sponsored by the Guangdong Provincial Key Laboratory of New and Renewable Research and Development

Year: 2018-2019
PI: **Long Wang**

"Wind Turbine Generation Performance Monitoring with Representation Learning"
Sponsored by Dong Energy Ltd.
Year: 2015-2017
PI: **Long Wang**

PUBLICATIONS

L. Wang and C. Huang, "Parameter Estimation of the Soil Water Retention Curve Model with Jaya Algorithm," *Computers and Electronics in Agriculture*, vol. 151, 2018.

C. Huang, **L. Wang**, "Simulation study on the degradation process of photovoltaic modules," *Energy Conversion and Management*, vol. 165, 2018.

L. Wang, Z. Zhang, C. Huang, "A GPU-accelerated Parallel Jaya Algorithm for Efficiently Estimating Li-ion Battery Model Parameters," *Applied Soft Computing*, vol. 65, 2018.

C. Huang, Z. Wang, Z. Zhao, **L. Wang**, C.S. Lai, D. Wang, "Robustness Evaluation of Extended and Unscented Kalman Filter for Battery State of Charge Estimation," *IEEE Access*, vol. 6, 2018.

L. Zhuang, **L. Wang**, Z. Zhang, K.L. Tsui, "Automated Vision Inspection of Rail Surface Cracks: A Double-layer Data-driven Framework," *Transportation Research Part C*, vol. 92, 2018.

L. Wang and C. Huang, "A Novel Elite Opposition-Based Jaya Algorithm for Parameter Estimation of Photovoltaic Cell Models," *Optik*, vol. 155, 2018.

C. Huang, **L. Wang**, R.S.C. Yeung, Z. Zhang, H.S.H. Chung, and A. Bensoussan, A Prediction Model Guided Jaya Algorithm for the PV System Maximum Power Point Tracking, *IEEE Transactions on Sustainable Energy,* vol. 9, no. 1, 2018.

C. Huang, **L. Wang**, "Gaussian Process Regression Based Modeling of Lithium-ion Battery Temperature-Dependent Open-Circuit-Voltage," *IET Electronics Letters*, vol. 53, no. 17, 2017.

L. Wang and Z. Zhang, "Automatic Detection of Wind Turbine Blade Surface Cracks Based on UAV-taken Images," *IEEE Transactions on Industrial Electronics*, vol. 64, no. 9, 2017.

L. Wang, Z. Zhang, H. Long, J. Xu, and R. Liu, Wind Turbine Gearbox Failure Identification with Deep Neural Networks, *IEEE Transactions on Industrial Informatics*, vol. 13, no. 3, pp. 1360-1368, June 2017.

S. Jang, K.S. Chin, **L. Wang**, G. Qu, and K.L. Tsui, Modified Genetic Algorithm-based Feature Selection Combined with Pre-trained Deep Neural Network for Demand Forecasting in Outpatient Department, *Expert Systems with Applications*, vol. 82, pp. 216-230, October 2017.

L. Wang, Z. Zhang, J. Xu, and R. Liu, Wind Turbine Blade Breakage Monitoring with Deep Autoencoders, *2017 IEEE Power and Energy Society General Meeting*, in press, 2017.

L. Wang, Z. Zhang, and J. Chen, Short-term Electricity Price Forecasting with Stacked Denoising Autoencoders, *IEEE Transactions on Power Systems*, vol. 32, no. 4, July 2017.

L. Wang, Z. Zhang, J. Xu, and R. Liu, "Wind Turbine Blade Breakage Monitoring with Deep Autoencoders," *IEEE Transactions on Smart Grid*, in press, 2016.

L. Wang, H. Long, Z. Zhang, J. Xu, and R. Liu, "Wind Turbine Gearbox Failure Monitoring Based on SCADA Data Analysis," *2016 IEEE Power and Energy Society General Meeting*, Boston, MA, July 2016.

H. Long, **L. Wang**, Z. Zhang, Z. Song, and J. Xu, "Data-Driven Wind Turbine Power Generation

Performance Monitoring," *IEEE Transactions on Industrial Electronics*, vol. 62, no. 10, pp. 6627-6635, June 2015.

SUBMITTED PAPERS	**L. Wang** and Z. Zhang, "A Two-stage Data-driven Approach for Image based Wind Turbine Blade Crack Inspection," *IEEE Transactions on Mechatronics,* under review. C. Huang, **L. Wang**, "Data-driven Short-term Solar Irradiation Forecasting Based on Information of Neighboring Sites," *IEEE Transactions on Industrial Electronics*, under 2nd review.
PRESENTATIONS	"Data-driven Wind Turbine Condition Monitoring," 2016 East Lake International Forum for Outstanding Overseas Young Scholars, December, 2016, Wuhan, China "Data Mining and its Application to Wind Energy," China Longyuan Power Group Corporation Ltd., November, 2016, Beijing, China "Wind Turbine Gearbox Failure Monitoring Based on SCADA Data Analysis," 2016 IEEE Power and Energy Society General Meeting, July 2016, Boston, USA "Wind Turbine Gearbox Failure Monitoring Based on SCADA Data Analysis," Seminar Series, Department of Systems Engineering and Engineering Management, City University of Hong Kong, August, 2016, Hong Kong "Data-driven Wind Turbine Generation Performance Monitoring," China Longyuan Power Group Corporation Ltd., August, 2015, Beijing, China
SOFTWARE	**Sarky Grammaticus** Developers: Long Wang, Haoqiang Liu, and Jun Shang This is a mobile game application (sponsored by Google UK) for Icelandic language learning, which supports multiple platforms including iOS and Android. An introduction video can be found at: `https:\\youtu.be\VAVMbOHz_h8`.
PROFESSIONAL ACTIVITIES	**Associate Editor**, IEEE Access **Lead Guest Editor**, Special Issue "Data-Driven Methods for Agricultural Water Management" on Water **Member**, IEEE & IEEE Power and Energy Society **Member**, Chinese Society for Electrical Engineering (CSEE) **Reviewer**, *IEEE Transactions on Industrial Electronics* **Reviewer**, *IEEE Transactions on Sustainable Energy* **Reviewer**, *IEEE Transactions on Network Science and Engineering* **Reviewer**, *IEEE Transactions on Cybernetics* **Reviewer**, *Renewable Energy* **Reviewer**, *Journal of Intelligent Manufacturing* **Reviewer**, *IET Electronics Letters*