

Curriculum Vitae (dated on Nov 1, 2018)

Zhou WU

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Dr Zhou Wu is a full professor in College of Automation, Chongqing University. His research interests include renewable energy system, demand side management, and green building technology. He has been working in these areas for about 10 years, and has set up collaborations with South Africa and Hong Kong. He has published more than 30 peer-reviewed journal papers on Applied Energy, Energy, Solar Energy and other related journals. He is a member of IEEE and ACM society. He serves as an associate editor for IEEE/CAA Journal of Automatica Sinica, and International Journal of Compute Science and Mathematics.

Research Fields

Energy management
Smart buildings and automation
Intelligent system modeling and control
Optimization algorithms

Education

Sep. 2009-March 2013, PhD, Dept. of Electronic Engineering, City University of Hong Kong
Sep. 2007-June 2009, Master, Dept. of Automation, Wuhan University, China
Sep. 2003-June 2007, Bachelor, Dept. of Automation, Wuhan University, China

Professional Careers

Feb. 2016-Present, Professor, Chongqing University, China
Sep. 2013-Dec. 2015, Senior Research Fellow, University of Pretoria, South Africa
Oct. 2012-Aug. 2013, Research Fellow, University of Pretoria, South Africa

University Courses

“Hardware design of computer”, Junior Semester B, 2017/2018

Projects

Multi-scale and multi-objective intelligent optimization techniques in the process of large building retrofit, China NSFC, 2019-2021
Demand-side management and optimization for renewable hybrid systems, 2016-2017

Awards

The 2017 best paper award, selected by Chongqing Science Technology Association

Supervised students

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Dr. Ruoli Tang (PhD graduate co-supervised with Prof Yanjun Fang)

Qian Li, and Mingyuan Yu (PhD candidates)

Nian Ao, Yuguang Chen, Shuai Li, Yan Zeng, and Yuyang Sun (Master candidates)

Academic Activities and Membership

Associated Editor of International Journal of Computer Science and Mathematics, IEEE/CAA
Journal of Automatica Sinica

IEEE/ACM member

Chinese Automation Association member

Member of IEEE Computation Intelligence Society

Reviewers of Nonlinear Dynamics, Energy, Applied Energy, and Journal of Process control, etc.

International Conference PI member, e.g., ICSI 2016, BIC 2017

Journal Papers (corresponding author is denoted as *).

- [1] R. Tang, Z. Wu*, X. Li, "Optimal operation of photovoltaic/battery/diesel/cold-ironing hybrid energy system for maritime application," *Energy*, vol. 162, pp. 697-714, 2018
- [2] B. Wang, Z. Wu, and L. Liu, "A Multi-Scale Differential Evolution Algorithm Based Maintenance Plan Optimization for Building Energy Retrofitting," *Complexity*, 2018
- [3] Z Wu and X Xia, "Tariff-driven demand side management of green ship," *Solar Energy*, vol. 170, pp. 991-1000, 2018
- [4] X Zhang, X Zhang, and Z Wu*, "Dual problem of sorptive barrier design with a multiobjective approach," *Neural Computing and Applications*, 30(9), pp. 2895–2905, 2018
- [5] Q Li, Z Wu*, X Xia, "Estimate and characterize PV power at demand-side hybrid system," *Applied Energy* 218, 66-77, 2018
- [6] Z Wu, K Zhao, X Xia, "Lighting retrofit and maintenance models with decay and adaptive control," *IET Control Theory & Applications*, 12(5), pp. 593 – 600, 2018
- [7] F Xu, Y Fang, Z Wu, J. Liang, "A method based on multiscale base-scale entropy and random forests for roller bearings faults diagnosis," *Journal of Vibroengineering*. 20(1), pp. 175-188, 2018
- [8] R Tang, Z Wu*, and Y Fang, Configuration of marine photovoltaic system and its MPPT using model predictive control, *Solar Energy*, 158, pp. 995-1005, 2017;
- [9] Z Wu, R Ling, and R Tang, Dynamic battery equalization with energy and time efficiency for electric vehicles, *Energy*, 41, pp. 937-948, 2017;
- [10] R Tang, Z Wu*, and Y Fang, Adaptive multi-context cooperatively coevolving particle swarm optimization for large-scale problems, *Soft Computing*, 21 (16), pp. 4735–4754, 2017;
- [11] X. Zhang and Z. Wu*, "Study neighborhood field optimization algorithm on nonlinear sorptive barrier design problems," *Neural Computing and Applications*, 28(4), pp. 783-795, 2017;
- [12] B Wang, Z. Wu, and X. Xia, A multistate-based control system approach toward optimal maintenance planning, *IEEE Transactions on Control Systems Technology* 25 (1), pp. 374-381, 2017;
- [13] Z. Wu, B. Wang, and X. Xia, "Large-scale building energy efficiency retrofit: Concept, model and control," *Energy*, 109, pp. 456-465, 2016;
- [14] R. Tang, Z. Wu*, and Y. Fang, "Maximum power point tracking of large-scale photovoltaic Array," *Solar Energy*, 134, pp. 503-514, 2016;

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- [15] B Zhu, X Xia, and Z Wu, Evolutionary game theoretic demand-side management and control for a class of networked smart grid, *Automatica*, 70, pp. 94-100, 2016;
- [16] F Yang, J Mei, and Z Wu, Finite-time synchronisation of neural networks with discrete and distributed delays via periodically intermittent memory feedback control, *IET Control Theory & Applications*, 10 (14), pp. 1630-1640, 2016;
- [17] Z. Wu and X. Xia, "Optimal Switching Renewable Energy System for Demand Side Management," *Solar Energy*, vol. 145, pp. 278-288, 2015;
- [18] Z. Wu, H. Tazvinga, and X. Xia, "Demand Side Management of Photovoltaic-Battery Hybrid System," *Applied Energy*, vol. 148, pp. 294-304, 2015;
- [19] Z. Wu, X. Xia and B. Wang, "Improving Building Energy Efficiency by Multiobjective Neighborhood Field Optimization," *Energy and Building*, vol. 87, pp. 45-46, 2015;
- [20] Z. Wu and X. Xia, "Model Predictive Control for Improving Operational Efficiency of Overhead Cranes," *Nonlinear Dynamics*, 79(4), pp. 2639-2657, 2015;
- [21] M. Zhao, C. Zhan, Z. Wu, and P. Tang, "Semi-supervised Image Annotation based on Local and Global Regression," *IEEE Signal Process Letters*, vol. 22, no. 10, pp. 1666-1670, 2015;
- [22] M. Zhao, T. W. S. Chow, Z. Wu*, Zhao Zhang, and Bin Li, "Learning from normalized local and global discriminative information for semi-supervised regression and dimensionality reduction," *Information Sciences*, vol. 324, pp. 286-309;
- [23] M. Zhao, B. Li, Z. Wu, and C. Zhang, "Image Classification via Least Square Semi-supervised Discriminant Analysis with Flexible Kernel Regression for Out-of-sample Extension," *Neurocomputing*, vol. 153, pp. 96-107, 2015;
- [24] Z. Wu and X. Xia, "Optimal Motion Planning for Overhead Cranes," *IET Control and Application Theory*, 8(17), pp. 1833-1842, 2014;
- [25] J. Mei, M. Jiang, Z. Wu, and X Wang, "Periodically intermittent controlling for finite-time synchronization of complex dynamical networks", *Nonlinear Dynamics*, 79(1), pp. 295-305, 2014;
- [26] H. Mo, Z. Xu, L. Xu, Z. Wu, and H. Ma, "Constrained Multi-objective Biogeography Optimization Algorithm," *The Scientific World Journal*, vol. 2014, pp. 1-12, 2014;
- [27] Z. Wu and T. W. S. Chow, "Binary Neighborhood Field Optimization for Unit Commitment Problems," *IET Generation Transmission & Distribution*, 7(3), pp. 299-308, 2013;
- [28] Z. Wu and T. W. S Chow, "Neighborhood Field for Cooperative Optimization," *Soft Computing*, 17(5), pp. 819-834, 2013;
- [29] Z. Wu and T. W. S Chow, "A Local Multiobjective Optimization Algorithm Using Neighborhood Field," *Structural and Multidisciplinary Optimization*, 46(6), pp. 853-870, 2012;

Conference Papers

- © Qian Li, Yuguang Chen, Nian Ao, Xu Han, Zhou Wu , Echo state network-based visibility graph method for nonlinear time series prediction, 2018 Chinese Control and Decision Conference (CCDC), pp. 1854-1859
- © Z Wu, and X Xia, A Portfolio Approach of Demand Side Management, IFAC 2017, pp. 171-176;
- © Z Wu, X Han, and X Xia, Interactive Dynamics in Building Maintenance and Retrofit Energy Procedia 105, pp. 3363-3368, 2017;
- © X Han, N Ao, and Z Wu, A switched MPC approach of hybrid system for demand side management, The 36th Chinese Control Conference (CCC), 2017, pp. 9197-9202

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- © R Tang, Z Wu, and Y Fang, Topological Structure of Large-scale Photovoltaic Array and its MPPT Controlling Method, *Energy Procedia* 105, pp. 113-118, 2017;
- © X Han, Z Wu, and Y Song, An economic dispatching and stability control approach for demand side management, 2017 29th Chinese Control And Decision Conference (CCDC), pp. 4125-4130, 2017;
- © Z Wu, and M Zhao, Leap on large-scale nonseparable problems, 2016 IEEE Congress on Evolutionary Computation (CEC), pp. 1808-1814, 2016;
- © B Wang, Z Wu, B Zhu, and X Xia, Optimal control of maintenance instants and intensities in building energy efficiency retrofitting project, 2015 IEEE 54th Annual Conference on Decision and Control (CDC), pp. 2643-2648, 2015;
- © Q. Chen, A. Mao, Z. Wu, and X. Xia, Time optimal MPC based on offline construction of ellipsoidal sets, 2015 34th Chinese Control Conference (CCC), pp. 4145-4150, 2015;
- © Z. Wu, X Xia, H. Tazvinga, B. Zhu, Switching control for renewable hybrid systems, 2015 34th Chinese Control Conference (CCC), pp. 2517-2522, 2015;
- © Z. Wu and X. Xia, "Optimal Schedule of Photovoltaic-Battery Hybrid System at Demand Side," in the 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014), pp. 553-558, Dec. 2014;
- © Z. Wu and X. Xia, "Energy efficiency of Overhead Cranes," in IFAC World Congress, vol. 19, pp. 19-24, Dec. 2014;
- © Z. Wu, X. Xia, and J. Zhang, "Decomposed Model Predictive Control for Economic Load Dispatching Problems," in IEEE AFRICON 2013, pp. 9-12, Sep. 2013;
- © Z. Wu, X. Xia, and J. Zhang, "MMODE: A Memetic Multiobjective Differential Evolution Algorithm," in *Advances in Swarm Intelligence, Lecture Notes in Computer Science*, vol. 7928, pp. 422-430;
- © Z. Wu, L. Xu, T. W. S. Chow, and M. Zhao, "Local Cooperation delivers global optimization," in Congress of Evolutionary Computation 2012, pp. 1-8, 2012;
- © M. Zhao, Z. Zhang, T. W. S. Chow, and Z. Wu, "On the theoretical and computational analysis between Trace Ratio LDA and null-space LDA," in International Joint Conference on Neural Networks 2012 (IJCNN2012), pp. 1-7, 2012;
- © Z. Wu and Y. Fang, "An Implementation of Mobile Robots' Path Planning and Tracing Based on Fuzzy PID Algorithms," 2008 Pacific-Asia Workshop on Computational Intelligence and Industrial Application (PACIIA 2008), pp.431-435, 2008;