JU CHENGQUAN

(65) 8281 6743
ju.chengquan@gmail.com
chengquan-ju

SUMMARY

Currently, I am a postdoc research fellow in Energy Research Institute, Nanyang Technological University. I received the Ph.D. in Electrical Engineering (Sustainable Earth) in 2018.

– Rich experience in mathematical modeling, hierarchical & distributed optimization, statistical data analysis, programming and their applications into specific fields;
– Solid research background on power systems and smart grid;
– Adaptable and reliable team player with strong interpersonal and communication skills; and
– An enthusiastic and engaged learner that continually embraces new knowledge.

EDUCATION/COURSES

Ph.D. in Electrical Engineering (Sustainable Earth) GPA: 4.83/5
Nanyang Technological University, Singapore | 2013 – 2018

M.Sc. in Power Engineering GPA: 4.88/5
Nanyang Technological University, Singapore | 2012 – 2013

B.Eng. in Electrical Engineering GPA: 3.44/4
Wuhan University, China | 2008 – 2012

Specialization: IBM Data Science Professional Certificate
IBM, Coursera | 2019

Specialization: Applied Data Science
IBM, Coursera | 2019

Specialization: Deep Learning
deeplearning.ai, Coursera | 2018

WORK EXPERIENCE

Nanyang Technological University

– Research Fellow — Apr 2018 – present
– Research Associate — Sep 2017 – Apr 2018

PROJECTS

Nanyang Technological University, Singapore

Current | Sep 2017 **Grid-wide intermittency management by aggregation of distributed energy storage systems (DESS)**

- Data collection, cleansing and analysis for power aggregation of distributed PV sites;
- Development of a scale-down DESS in HDB blocks for intermittency management and frequency support;
- Integration of latest control algorithms, including ramp-rate based, frequency and SoC regulation to hierarchical controllers.

May 2017 | Jan 2014 **Energy management for microgrids (*doctoral*)**

- Distributed and robust optimization for energy scheduling in the regional multi-microgrid community;
- Stochastic/robust optimal power flow (OPF) under uncertainties of loads and renewables & dynamic OPF including energy storages.
- Energy management system for microgrids with data-driven degradation costs.

May 2013 | Aug 2012 **Wireless network communication in intelligent trading/metering/billing system (ITMBS)**

- Development of multi-agent communication in network;
- Data acquisition, collection and supervision in line with Zigbee coordinators using C# & MySQL database;
- Web portal design for ITMBS using PHP & HTML.

May 2012 | Jan 2012 **Design & realization of battery protection & balancing via LabVIEW**

- Decentralized system design of battery protection and SoC balancing scheme;
- Hardware-in-loop (HIL) experimental platform with LabVIEW.

AWARDS

2017 | Best Conference Paper Award, IEEE-EI, Beijing, China

2016 | Student Travel Grant, POWERCON, Wollongong, Australia

2013 | Professional Engineers Board Gold Medal, Nanyang Technological University, Singapore

2010 | Student Awards, Wuhan University, Wuhan, China

SKILLS

Expertise

Power systems
Mathematical modeling
Hierarchical/distributed optimization
Data Science

Programming/Scripting Language

Proficient	MATLAB, LaTeX, Gurobi
Intermediate	Python, CPLEX, PLECS, Simulink, C#, Markdown
Experienced	R, Julia, PHP, HTML5/CSS, MySQL, LabVIEW

Natural Language

Fluent	Chinese, English
Basic	Japanese

PUBLICATIONS

Journal

C. Ju, P. Wang, L. Goel, and Y. Xu, "A two-layer energy management system for microgrids with hybrid energy storage considering degradation costs," *IEEE Trans. on Smart Grid*, vol. 9, no. 6, pp. 6047–6057, 2018.

Conference

C. Ju, Y. Tang, and Y. Wang, "Robust frequency regulation with hybrid energy storage systems in islanded microgrids," in *Asian Conference on Energy, Power and Transportation Electrification (ACEPT 2018)*, Oct. 2018, pp. 1–6.

C. Ju, S. Yao, and P. Wang, "Resilient post-disaster system reconfiguration for multiple energy service restoration," in *1st IEEE Conference on Energy Internet and Energy System Integration*, Nov. 2017, pp. 1–6.

C. Ju and P. Wang, "Two-stage energy management of residential microgrid community using pairing strategy," in *2017 IEEE PES General Meeting*, Jul. 2017, pp. 1–5.

C. Ju and P. Wang, "Optimal power flow with worst-case scenarios considering uncertainties of loads and renewables," in *2016 International Conference on Probabilistic Methods Applied to Power Systems (PMAPS)*, Oct. 2016, pp. 1–7.

C. Ju and P. Wang, "Energy management system for microgrids including batteries with degradation costs," in *2016 IEEE International Conference on Power System Technology (POWERCON)*, Sep. 2016, pp. 1–6.

C. Ju and P. Wang, "Dynamic optimal power flow including energy storage with adaptive operation costs," in *IECON 2015 - 41st Annual Conference of the IEEE Industrial Electronics Society*, Nov. 2015, pp. 561–566.