Zhen Wang

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Education

Tsinghua University — *Shenzhen, China*

M.S. in Environmental Science and New Material Technology (Electrical Engineering) — *Sept 2021 - Current*

- Tsinghua-Berkeley Shenzhen Institute.

Nanjing Tech University — *Nanjing, China*

B.S. in Electrical Engineering — *Sept 2017 - Jun 2021*

- Double degree in Human Resource Management.

The University of Manchester — *Manchester, UK*

Visiting student in Department of Mechanical, Aerospace and Civil Engineering — *Jul 2019 - Aug 2019*

- Programme on Signals and Systems and Mechatronics, Optical and Manufacturing Engineering.

Projects

National Key R&D Program of China, "Key Technology of Digital Grid" (2020YFB0906000) — *Shenzhen, China*

Participant — *Sept 2021 - present*

- Develop a toolbox for extracting grid information (IEC 61970, XML file) from DSO.
- Propose a practical planning method for urban distribution network planning with GIS. Significantly boosted the computation efficiency (×1000), the investment cost dropped more than 30%.

China Southern Power Grid (CSG), "Energy Efficiency Data Mining Tech. for Multi-energy Park Planning" — *Shenzhen, China*

Participant — *Sept 2021 - present*

- Responsible for the scenario generation part of the multi-energy park.
- Develop a heuristic moment-matching scenario generation method with high robustness based on an open-source repository.
- Deploy a real-time microservice framework of multi-energy park for CSG in Guangzhou.

National Natural Science Foundation of China, Youth Fund, "Research on Data-driven planning method for Integrated Energy Distribution System considering multiple energy storage" (No.52007123) — *Shenzhen, China*

Participant — *Nov 2020 - present*

- Propose a planning approach for integrated energy distribution system (IEDS) with multiple energy storage (ES).
- Attend international conference for poster presentation.

National Key R&D Program of China, "Key Technologies and Applications of Energy Internet for Future Urban Area" (2018YFB0905000) — *Nanjing, China*

Participant — *Apr 2019 - Sept 2020*

- Propose a dispatching method for integrated energy system (IES) based on dynamic time-interval of model predictive control (MPC).
- Build an operating framework of the grading dynamic aggregation platform, and proposes a decentralized multi-energy resources aggregation strategy based on bi-level interactive transactions of virtual energy plant (VEP).

Services & Experiences

Introduction to Smart Grid — *Shenzhen, China*

Teaching Assistant — *Feb 2023 - Jun 2023*

- Class management Given by Prof. Qiuwei Wu.

Tsinghua Shenzhen International Graduate School Football Association — *Shenzhen, China*

Chairman — *Nov 2022 - present*

- Event organization, team training, financial management.

RoboMaster University AI Challenge — *Nanjing, China*

Team Leader — *Sept 2020 - Jun 2021*

- First Prize in international competition, attending ICRA 2021.

Publications

Journal Articles

A decentralized multi-energy resources aggregation strategy based on bi-level interactive transactions of virtual energy plant
Xun Dou, Jun Wang, Zhen Wang, Tao Ding, Shizhen Wang
International Journal of Electrical Power & Energy Systems 124 (2021) p. 106356. Elsevier, 2021

A dispatching method for integrated energy system based on dynamic time-interval of model predictive control
Xun Dou, Jun Wang, Zhen Wang, Lijuan Li, Linquan Bai, Shuhui Ren, Min Gao
Journal of Modern Power Systems and Clean Energy 8.5 (2020) pp. 841–852. SGEPRI, 2020

Medium-and long-term integrated demand response of integrated energy system based on system dynamics
Shuhui Ren, Xun Dou, Zhen Wang, Jun Wang, Xiangyan Wang
Energies 13.3 (2020) p. 710. MDPI, 2020

Conference Proceedings

An Integrated Energy Distribution System Planning Method with Multiple Energy Storage Systems
Zhen Wang, Xinwei Shen, Hongbin Sun
2021 IEEE 5th Conference on Energy Internet and Energy System Integration (EI2), 2021

Optimal dispatch of microgrid considering interruptible load
Zhen Wang, Yunfan Shao, Xun Dou, Jun Wang, Xin Zhang
2020 12th IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2020

Awards

2021	**Outstanding Graduate Award of Jiangsu Province**	*China*
2021	**Jiangsu Province College Student of the Year (Nominated)**	*China*
2020	**NJTech Person of the Year (10 each year)**	*China*
2020	**NJTech President Scholarship (20 each year)**	*China*
2019	**China National Scholarship (Top 0.2%)**	*China*
2019	**Stars of Self-improvement of Chinese College Students**	*China*
2019	**Jiangsu Province Young Undergraduates Overseas Immersion Scholarship**	*China*

Skills

Programming Matlab (MATPOWER, YALMIP, Gurobi, CPLEX), Python (PyTorch, OSMnx, NetworkX), C/C++.
Miscellaneous LaTeX(Overleaf), Markdown, MS Office, Git.
Soft Skills Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Languages

Mandarin Native proficiency
English Professional proficiency

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