

# Zhen Wang

Tsinghua Shenzhen International Graduate School (SIGS), Tsinghua University, Shenzhen, 518055, China

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## Education

### Tsinghua University

M.S. in Environmental Science and New Material Technology (Electrical Engineering)

- Tsinghua-Berkeley Shenzhen Institute.

Shenzhen, China

Sept 2021 - Current

### Nanjing Tech University

B.S. in Electrical Engineering

- Double degree in Human Resource Management.

Nanjing, China

Sept 2017 - Jun 2021

### The University of Manchester

Visiting student in Department of Mechanical, Aerospace and Civil Engineering

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

Manchester, UK

Jul 2019 - Aug 2019

## Projects

### National Key R&D Program of China, “Key Technology of Digital Grid” (2020YFB0906000)

Participant

- 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%.

Shenzhen, China

Sept 2021 - present

### China Southern Power Grid (CSG), “Energy Efficiency Data Mining Tech. for Multi-energy Park Planning”

Participant

- 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.

Shenzhen, China

Sept 2021 - present

### 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)

Participant

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

Shenzhen, China

Nov 2020 - present

### National Key R&D Program of China, “Key Technologies and Applications of Energy Internet for Future Urban Area” (2018YFB0905000)

Participant

- 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).

Nanjing, China

Apr 2019 - Sept 2020

## Services & Experiences

### Introduction to Smart Grid

Teaching Assistant

- Class management Given by Prof. Qiuwei Wu.

Shenzhen, China

Feb 2023 - Jun 2023

### RoboMaster University AI Challenge

Team Leader

- First Prize in international competition, attending ICRA 2021.

Nanjing, China

Sept 2020 - Jun 2021

### Tsinghua Shenzhen International Graduate School Football Association

Chairman

- Event organization, team training, financial management.

Shenzhen, China

Nov 2022 - present

## 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. SGEPR, 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

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

## Skills

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

## Languages

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<b>Mandarin</b>	Native proficiency
<b>English</b>	Professional proficiency