

# CHENG FENG

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Room 4-301, West Academic Building, Tsinghua University, Beijing, China, 100084

## EDUCATION

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### Ph.D. Candidate, Electrical Engineering

Sep 2019 - Present

Department of Electrical Engineering, Tsinghua University, China

Supervisor: Prof. Qixin Chen, Tsinghua University

Co-supervisor: Dr. Yi Wang, the University of Hong Kong.

### Visiting Scholar

Feb 2023 - Aug 2023

Automatic Control Lab (ifA), ETH Zürich, Switzerland

Co-supervisor: Prof. Florian Dörfler, ETH Zürich.

### B.E., Electrical Engineering

Sep 2015 - Jun 2019

Department of Electrical Engineering, Huazhong University of Science and Technology, China

## PUBLICATIONS

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### Cyber-Physical System Optimization

- *Cheng Feng\**, Kedi Zheng, Yi Wang, Kaibin Huang, Qixin Chen. Goal-Oriented Wireless Communication Resource Allocation for Cyber-Physical Systems. (2023). *Working Paper*.
- *Cheng Feng\**, Kedi Zheng, Yangze Zhou, Peter Palensky, Qixin Chen. Update Scheduling for ADMM-based Energy Sharing in Virtual Power Plants Considering Massive Prosumer Access. (2023). *IEEE Transactions on Smart Grid*, 14(5), 3961-3975.
- *Cheng Feng\**, Qixin Chen, Yi Wang, Jiaqi Ma, Xuanyuan Wang. Frequency Regulation Service Provision for Virtual Power Plants through 5G RAN Slicing. (2022). *IEEE Transactions on Smart Grid*, 13(6), 4943-4956.
- *Cheng Feng\**, Yi Wang, Xuanyuan Wang, Qixin Chen. Device Access Optimization for Virtual Power Plants in Heterogeneous Networks. (2021). *IEEE Transactions on Smart Grid*, 13(2), 1478-1489.
- Adrian Lang, Yi Wang, *Cheng Feng\**, Eleni Stai, Gabriela Hug. Data Aggregation Point Placement for Smart Meters in the Smart Grid. (2021). *IEEE Transactions on Smart Grid*, 13(1), 541-554.
- Yi Wang, Qixin Chen, Ning Zhang, *Cheng Feng\**, Fei Teng, Mingyang Sun, Chongqing Kang. (2019). Fusion of the 5G communication and the ubiquitous electric internet of things: application analysis and research prospects (in Chinese). *Dianwang Jishu/Power System Technology*, 43(5), 1575-1585.

### Power System Stability and Control

- *Cheng Feng\**, Linbin Huang, Xiuqiang He, Yi Wang, Florian Dörfler, Qixin Chen. Joint Oscillation Damping and Inertia Provision Service for Converter-Interfaced Generation. (2023). *Submitted to IEEE Transactions on Power Systems*, Under Review. Available on Arxiv, 2309.01321.
- *Cheng Feng\**, Qixin Chen, Yi Wang, Peng-Yong Kong, Hongchao Gao, Songsong Chen. Provision of Contingency Frequency Services for Virtual Power Plants with Aggregated Models. (2023). *IEEE Transactions on Smart Grid*, 14(4), 2798-2811.

### Power System Flexibility and Intelligent Energy Management

- Chenyu Zhou, *Cheng Feng\** (Contribute Equally), Yi Wang. Spatial-Temporal Energy Management of Base Stations in Cellular Networks. (2021). *IEEE Internet of Things Journal*, 9(13), 10588-10599.
- *Cheng Feng\**, Yi Wang, Qixin Chen, Yi Ding, Goran Strbac, Chongqing Kang. Smart grid encounters edge computing: Opportunities and applications. (2021). *Advances in Applied Energy*, 1, 100006.
- *Cheng Feng\**, Yi Wang, Qixin Chen, Xuan Zhang, and Gang Luo. (2020) Review of energy management for data centers in energy internet (in Chinese). *Dianli Zidonghua Shebei/Electric Power Automation Equipment*, 40(7), 1-9.

- *Cheng Feng\**, Yi Wang, Kedi Zheng, Qixin Chen. Smart meter data-driven customizing price design for retailers. (2019). *IEEE Transactions on Smart Grid*, 11(3), 2043-2054.

## SESSIONS AND TALKS

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- PhD Dissertation Challenge (Final Round) April 10-13, 2023  
IEEE PES Grid Edge Technologies Conference and Expo, San Diego, CA, USA.
- Invited Reports about IoT Applications in Smart Grids November 8, 2020  
Research Highlight in Beijing Area, Beijing Association for Science and Technology, Beijing, China.

## PROJECTS

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- **DATA-Analytics for Enhanced Operation of Local Energy Systems from Cyber-Physical-Social Perspectives (DATALESs)** January 2022 - Present  
*Supported by NSFC and NWO*
- Efficient and scalable DER Aggregation and peer-to-peer transaction
- **Key Technologies in Aggregation, Interaction, and Regulation of Large-Scale Flexible Resources and Virtual Power Plants** October 2021 - Present  
*Supported by the Ministry of Science and Technology of China*
- Modeling and hierarchical aggregation of heterogeneous flexible resources
- **Behavior Modeling, Characteristics Analysis and Interaction Optimizing for Multiple Types of Users Supported by Power Internet of Things** January 2021 - Present  
*Supported by Major Smart Grid Joint Project of NSFC and SGCC*
- Cyber-physical user modelling in power distribution systems
- **Theory and Methodology of Generalized Dynamic Demand Response Towards Urban Energy System** January 2018 - December 2021  
*Supported by Major Smart Grid Joint Project of NSFC and SGCC*
- Feature extraction, forecasting, and clustering of electricity load profiles

## AWARDS

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- **Sifang Foundation Scholarship for Academic Excellence,**  
Awarded by Tsinghua University .....November 2022
- **CSAC Foundation Scholarship for Academic Excellence,**  
Awarded by Tsinghua University .....November 2020
- **Outstanding Undergraduate Award,**  
Awarded by Huazhong University of Science and Technology ..... June 2019
- **Undergraduate National Scholarship,**  
Awarded by Ministry of Education ..... October 2018
- **Ultra High Voltage Scholarship for Academic Excellence,**  
Awarded by State Grid of China ..... October 2017
- **Xuji Electric Foundation Scholarship for Academic Excellence,**  
Awarded by Huazhong University of Science and Technology .....May 2017
- **Sieyuan Foundation Scholarship for Academic Excellence,**  
Awarded by Huazhong University of Science and Technology .....May 2016

## ACADEMIC SERVICES

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Serve as reviewers for IEEE TSG, IEEE IOTJ, IEEE TEMPR, IEEE ISJ, and several journals.