

# Junjie Yin

✉ yinjunjie@seu.edu.cn | 🌐 http://jyin.me/ | 📍 No.2 Sipailou, Nanjing, China

## Education

### Southeast University (SEU)

Nanjing

MS in Electrical Engineering, GPA: 3.79/4.0

Sep. 2020 - Jun. 2023

- Thesis entitled “Research on Transient Stability of Grid-connected Converter”
- Research interests: Smart Grid; Stability of power system; Grid-connected converters; Integrated energy system; Lyapunov optimization

### North China Electrical Power University (NCEPU)

Beijing

BS in Electrical Engineering, GPA: 3.73/4.0 (Ranked 1<sup>st</sup>/80)

Sep. 2016 - Jun. 2020

- Thesis entitled “Research on Multi-energy Flow Interactive Coupling Characteristics and Optimal Scheduling of Integrated Energy System”

## Technical Skills

### Programming

Matlab, C, Python

### Professional Softwares

Simulink, PLECS, Mathcad, PSCAD, RT-Box, Multisim, CVX, IBM Cplex, Yalmip

### Drawing & Typesetting

Photoshop, Illustrator, SketchUp, Office, L<sup>A</sup>T<sub>E</sub>X, Beamer

### Languages

English, Mandarin (Native)

## Representative Publications

### Journal Papers:

- [1] J. Yin, J. Wang, J. You, et al. “Integrated Energy System Optimal Operation in Coal District with Hydrogen Heavy Trucks,” *Frontiers in Energy Research*, vol. 9, pp. 748673, 2021. (SCI, IF: 4.008) [Link](#)
- [2] J. Yin, Y. Chen, G. Sang, et al. “QoE-Oriented Rate Control and Resource Allocation for Cognitive M2M Communication in Spectrum-Sharing OFDM Networks,” *IEEE Access*, vol. 7, pp. 43318-43330, 2019. (SCI, IF: 3.367, Cited by 13 papers) [Link](#)
- [3] W. Xu, W. Zhang, Y. Hu, J. Yin and J. Wang, “Multi Energy Flow Optimal Scheduling Model of Compressed Air Energy Storage Based on Matrix Modeling of Energy Hub,” *Transactions of China Electrotechnical Society*, 2022. (In Chinese, Accepted on Aug. 2022)
- [4] J. Wang, J. Yin, X. Jin. “Improved Reactive Loop-Based Sequence Impedance Model and Stability Analysis of VSG Inverters with Coupling Frequency,” *IEEE Transactions on Power Electronics*, 2022. (Submitted)

### Conference Papers:

- [1] W. Zhang, W. Xu, Y. Hu, J. Yin. “Multi Energy Flow Optimal Scheduling Model of Compressed Air Energy Storage Based on Matrix Modeling of Energy Hub,” *Proceedings of 2022 The 4th International Conference on Power and Energy Technology (ICPET 2022)*, pp. 789-794, Xining, China, Jul. 2022.
- [2] S. Jiang, Y. Wang, D. Wang, J. Yin\*, H. Yan, J. Wang. “Reliability Assessment of Distribution Network Considering Differentiated End-Users Demand for Reliability,” *Proceedings of 2020 International Conference on Smart Grid and Energy Engineering (SGEE 2020)*, pp. 12026-12032, Guilin, China, Nov. 2020.

### Patents:

- [1] J. Yin, J. Wang, N. Wang, et al. “A User-Oriented Calculation Method of Distribution Network Reliability Evaluation Index.” China Patent No. 2022108630263. 23 Jul. 2022.
- [2] J. Wang, J. Yin, H. Yan. “Method for Weight Formulating of the Evaluation Index of Distribution Network Reliability.” China Patent No. 2022100109403. 06 Jan. 2022.
- [3] J. Wang, J. Yin, X. Li. “A Modeling Method of Converter Sequence Impedance in Rectifier-Inverter Mode.” China Patent No. 2021112230502. 20 Oct. 2021.
- [4] J. Wang, J. Yin, X. Li. “An Improved Control Method for Power Decoupling Based on Adaptive Virtual Impedance.” China Patent No. 2021112230517. 20 Oct. 2021.

## Research Projects

### Research on Active and Rapid Support Technology of Transient Frequency and Voltage for

Beijing

### Photovoltaic/Wind Farm Stations

Topic Investigator

Dec. 2021 - Nov. 2025

- Funded by National Key Research and Development Program of China (No. 2021YFB2400500)
- Studied the difference and integration between Grid-Forming (GFM) and Grid-Following (GFL) converters
- Conducted qualitative and quantitative analysis of transient stability, by Equal area criterion (EAC) and Lyapunov function
- Proposed Virtual Synchronous Generator (VSG)-based converters stabilization control methods
- Verified by Hardware-in-the-Loop (HIL) experiment, utilizing the RT-Box and PLECS

## Research on Distribution Network Planning and Power Supply Restoration Technology Facing the Reliability Needs of End Users

Tianjin

Topic Investigator

Jan. 2020 - Dec. 2021

- Funded by State Grid Corporation Headquarters Technology Project (No. 5400-202012118A-0-0-00)
- Proposed innovatively the distributed network reliability evaluation index based on the value engineering theory
- Established a comprehensive reliability evaluation index system considering the number of users and power supply capacity
- Calculated the reliability evaluation index weight based on Analytic hierarchy process (AHP)-Entropy weight method (EWM)

## Research on Friendly Grid-Supporting and Online Evaluation Technology of New Energy for Bilateral Service Between Plant and Grid

Yangzhou

Project Investigator

Jun. 2021 - Dec. 2022

- Funded by Jiangsu Power Grid Corporation Scientific Research Project (No. J2021012)
- Studied Kmeans-based PV generation units clustering and characteristics extraction technology
- Constructed the fault self-diagnosis evaluation system of PV, aiming to accurately locate the fault panel
- Proposed the VSG-based inertia evaluation and control method for PV system to realize the friendly interaction

## Research on Interaction and Coupling Characteristics of Multi-energy Flow in Integrated Energy System

Changzhou

Project Investigator

Sep. 2019 - Dec. 2020

- Funded by Jiangsu Power Grid Corporation Scientific Research Project (No. J2019082)
- Studied the various characteristics of multi-energy flows on different spatio-temporal scales
- Established a matrix modeling of energy hub to portray the conversion relationships between multi-energy flows
- Proposed power-to-gas (P2G) optimized scheduling model of IES based on second-order cone programming (SOCP)
- Verified the feasibility, economy, low carbon, and effectiveness of the proposed mechanism by MATLAB/CPLEX

## Awards and Honors

Oct. 2020-2021	<b>Scholarship:</b> "Graduate Scholarship of SEU" (3 Times), "Graduate Scholarship of NR Electric Co., Ltd"	Nanjing
Nov. 2020	<b>Contest:</b> Second Prize of China in "National Post-Graduate Mathematical Contest in Modeling"	Shanghai
Jun. 2020	<b>Honorary Title:</b> "Excellent Graduate of Beijing"	Beijing
Nov. 2019	<b>Contest:</b> First Prize of Beijing in "Contemporary Undergraduate Mathematical Contest in Modeling"	Beijing
Oct. 2017-2019	<b>Scholarship:</b> "Undergraduate Scholarship" (3 Times), "Scholarship of Beijing Banner Electric Co., Ltd"	Beijing
Sep. 2017-2019	<b>Honorary Title:</b> "Outstanding Student Leaders" (2 Times), "Distinction Student"	Beijing

## Volunteer Services

### IEEE ACCESS, IEEE Transactions on Industry Applications

ScholarOne Website

Peer Reviewer

Oct. 2020 - Present

- Reviewed 15 manuscripts submitted to IEEE ACCESS
- Reviewed 2 manuscripts submitted to IEEE Transactions on Industry Applications

### International Academic Conferences

Several Cities

Presentation / Attendance

Oct. 2019 - Present

- IEEE 5th International Electrical and Energy Conference (CIEEC 2022), Nanjing, May. 2022
- The 5th IEEE Conference on Energy Internet and Energy System Integration (EI<sup>2</sup> 2021), Taiyuan, Oct. 2021
- International Conference on Smart Grid and Energy Engineering (SGEE 2020), Guilin, Nov. 2020
- 2019 Annual Meeting of Chinese Society for Electrical Engineering (CSEE Annual 2019), Beijing, Nov. 2019

### Frontiers Journals, Higher Education Press

Beijing

Publicist

May. 2022 - Aug. 2022

- Promoted the public acknowledgment of "Frontiers Journals", an English academic journal series launched by Higher Education Press (HEP), through posters, online forums, and meetings with scholars.

### Yangzhou Electric Power Co., Ltd, State Grid

Yangzhou

Intern

Jul. 2021 - Jan. 2022

- Investigated the power overcapacity problems of typical users (e.g., Tea factory) and designed suitable methods
- Experienced the workflow of dispatch centers, transformer substations and other departments on the spot

### North China Electric Power University

Beijing

Student Leader

Feb. 2016 - Jun. 2020

- Received and dispatched messages/materials, and allocated tasks detailedly in School of Electrical and Electronic Engineering
- Held responsible for elections, proposals, candidate reviews, and the annual Congress, serving as a member of Student Committee