WeiqiMeng

No.932 South Lushan Road, Changsha Hunan, P.R. China 410083

☎: +86 18874959319 | ✉: mengweiqi@csu.edu.cn | 🖳: weiqimeng7.github.io

Electrical Engineering | School of Automation

EDUCATION

Central South University, (985, 211, Double-first class A), **M. Sc**   **Sep,2021-Present**

Electrical Engineering | **GPA**: **90.04**/100

Research interests: Energy System Optimization, Active Distribution Networks, Electric Vehicles, Energy Storage

University of Science and Technology of China, (985, 211, QS top100)   **Sep,2021-June,2022**

Chinese Academy of Sciences, **Joint training project**

Kunming University of science and technology, B. Eng   **Sep,2017-June,2021**

Electrical Engineering and Automation (Elite Engineer Class) | **GPA: 92.65**/100

Main course: Power System Analysis (95/100), Power Electronics Technology (97/100), Linear Algebra (94/100), Complex Variables and Integral Transformations (100/100), Artificial Intelligence (93/100)

PUBLICATIONS

Journal Paper

[1] A Critical Survey of Integrated Energy System: Summaries, Methodologies and Analysis   **Aug,2022**
Accepted by: *Energy Conversion and Management*, IF: **10.4**, JCR **Q1**, Second author (advisor first), DOI: https://doi.org/10.1016/j.enconman.2022.115863

[2] Dynamic Optimal Power Flow of Active Distribution Network Based on LSOCR and Its Application   **Mar,2023**
Scenarios
Accepted by: *Electronics*, IF: **2.9**, JCR **Q3**, First author, DOI: https://doi.org/10.3390/electronics12071530

[3] A Bi-Level Optimization Strategy for EV Retailers Based on Robust Pricing and Hybrid Demand   **Dec,2023**
Response
Submitted to: *Energy*, IF: **9.0**, JCR **Q1**, First author, DOI: https://doi.org/10.1016/j.energy.2023.129913

[4] Distributed Energy Management of EV Charging Stations Based on Hierarchical Pricing Mechanism   **Revision (submitted)**
and Aggregate Feasible Regions
Submitted to: *Energy*, IF: **9.0**, JCR **Q1**, First author

Conference Paper

[5] Robust pricing strategy with EV retailers considering the uncertainty of EVs and electricity market   **May,2023**
Accepted by: *IEEE Explore*, IET-Tsinghua Doctoral Forum 2023, DOI: https://doi.org/10.1049/icp.2023.1827

[6] Robust Optimal Scheduling of Wind Thermal Energy Storage System Considering Wind Power Uncertainty   **Sep,2021**
Accepted by: *CNKI*, China Automation Congress 2021, DOI: https://doi.org/10.26914/c.cnkihy.2021.053552

RESEARCH EXPERIENCE

1. Key Technology Research on Battery + Super Capacitor Hybrid Energy Storage System   June,2022-Sep,2023
under Multiple Application Scenarios in Power System [2], [3], [4], [5]

Institution: China Energy Construction Group | Contract No.: HFW202300091 | 115, 000 RMB | ***Team leader***

- Investigated the electrical characteristics of various energy storage units, conducted modeling and analysis of these characteristics in Simulink
- Developed a control model for a hybrid energy storage system and a two-layer optimization model for capacity allocation, utilizing advanced intelligent algorithms for solution
- Constructed a simulation platform for the hybrid energy storage system in MATLAB, outperforming alternative two real-world scenarios (Microgrids and renewable energy) in terms of optimality and scalability

2. Key Technology and Equipment Development for Intensive Management of Distributed   Sep,2021-July,2023
Energy Systems in Industrial Scenarios [1], [2], [6]

Institution: Chinese Academy of Science | Contract No.: 202003a05020019 | 1, 000, 000 RMB | ***Key member***

- Real-time Scheduling Strategy for Source-Grid-Load-Storage:

With economic efficiency as the objective, and power balance, equipment capacity, and operational costs as constraints, construct an economic optimization scheduling model for source-grid-load-storage. The model is solved using the Hessian matrix iterative interior point method, enabling the achievement of the optimal economic dispatch for the distributed energy system

3. Mathematical Modeling Research on Power Electronic Energy Equipment [1], [6]　　　　　　**Sep,2021-May,2022**

Institution: Chinese Academy of Science | Contract No.: IPP-DL-21071605 | 360, 000 RMB | ***Team leader***

- Built a Microgrid test model based on the 14-bus IEEE distribution system, which serves as a research tool for analyzing electrical grids during their transition to Smart Grids

- Developed a fundamental platform for various studies, including reactive power compensation, stability and inertia analysis, reliability assessments, demand response investigations, hierarchical control, fault-tolerant control, optimization, and energy storage strategies

4. Technological Research on Novel Energy Routers Enabling Flexible Networking in Unfixed　　**Jan,2022-Present**
Grid Power Systems [1] [2]

Institution: National Natural Science Foundation of China | No.: 52177204 | 600, 000 RMB | *Member*

COMPETITION EXPERIENCE

1. "Huawei Cup" 19th China Graduate Mathematical Modeling Competition　　　　　　**Nov,2022**

Topic: Bilevel mathematical optimization | **National 3rd prize** | Team captain

Supervisor: Prof. Hongyan Zhang, Central South University | School of mathematical statistics

- Selected Huawei Enterprise competition topic "Two-stage Optimization for Coordinated Grouping and Layout of Two-dimensional Square Parts", aiming at the challenge of large-scale grouping and layout optimization of square parts in the industry. Developed a tailored two-stage optimization model to meet specific requirements. Utilized MATLAB, YALMIP, and GUROBI solver for efficient solution

2. "CEEE Cup" 15th National University Students Electrical Math Modeling Competition　　　**May,2023**

Topic: Artificial intelligence | **National 2nd prize** | Team captain

Supervisor: Prof. Dongran Song, Central South University | School of Automation

- Analyzed and evaluated the impact of artificial intelligence on university students' learning by establishing evaluation criteria and drawing final conclusions using the Analytic Hierarchy Process, CiteSpace 6.1 clusters and machine learning regression models

3. The 7th Hunan Province Mathematical Modeling Competition　　　　　　　　　　　　**Sep,2022**

Topic: Optimization dispatch of energy storage EVs | **Provincial 3rd prize** | Team captain

Supervisor: Prof. Hongyan Zhang, Central South University | School of mathematical statistics

- Developed a dynamic scheduling model utilizing GUROBI solver to address the optimization and scheduling challenges of mobile energy storage vehicles. Employed a two-layer optimization framework to decompose complex scheduling problems

4. National English Competition for College Students | **National 3rd prize**　　　　　　　　　**May,2019**

HONORS AND AWARDS

Graduate

- National Scholarship of Postgraduate (First year)　　　　　　　　　　　　　　　　**Oct,2022**

- First-class Graduate Scholarship (Twice)　　　　　　　　　　　　　　　　　　　**2022-2023**

- Annual Person of the Year Nomination Award (Only 15 in the whole school)　　　　　　**Nov,2021**

- Annual Excellent Postgraduate Student at Central South University　　　　　　　　　**May,2022**

Undergraduate

- Provincial Government Scholarship (First year)　　　　　　　　　　　　　　　　　**Sep,2018**

- Provincial Outstanding Bachelor Graduate　　　　　　　　　　　　　　　　　　　**June,2021**

- Provincial Excellent Undergraduate (Twice)　　　　　　　　　　　　　　　　　　**2018-2021**

- University Scholarships (3 times for special grade, 2 times for first prize, 1 time for outstanding talent)　　**2018-2021**

- Excellent Undergraduate Thesis **June,2021**
- Merit Student at Kunming University of Science of Technology (3 times) **2018-2021**

OTHER EXPERIENCE

• **Activity**	Guest speaker at the 3rd "Lunan Youth Forum" (Featured in media such as People's Daily); Several provincial, municipal, and campus-level volunteering endeavors
• **Student work**	Campus level: two organizational committees; Faculty-level: Vice minister of science and technology association; Class-level: Academic affairs representative

SKILLS

• **Languages**	Mandarin Chinese (native), English (fluent), IELTS (6.5)
• **Skill**	MATLAB, YALMIP, GUROBI, Python, GAMS, Origin, CAD, LINGO, PS, PR, Computer (Office, C, Level 3 network technology), Driver license
• **Hobbies**	Badminton, Notion, Obsidian, Photography, GitHub, ChatGPT