

Baligen Talihati

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EDUCATION

Master of Engineering, Fudan University, Shanghai CHN **Sept. 2022 – Jun. 2025**

Major in Electronics Science and Technology, GPA 3.71/4.00

Core Modules: Modern Control Theory and Technology, Modern Sensor Technology, Detection of Weak Signal.

Dissertation: Community Energy Management Method Based on Multi-Agent Reinforcement Learning.

Bachelor of Engineering, Fudan University, Shanghai CHN **Sept. 2016 – Jun. 2020**

Major in Electrical Engineering and Automation, GPA 3.16/4.00

Core Modules: Mathematical Analysis, C Programming Language, University Physics, Linear Algebra, Automatic Control Technology.

RESEARCH INTERESTS

Smart Grid, Renewable Energy, Machine Learning

PUBLICATIONS AND PATENTS

Publications:

[J.1] Baligen Talihati, Shengyu Tao, Shiyi Fu, Bowen Zhang, Hongtao Fan, Qifen Li, Xiaodong Lv, Yaojie Sun, Yu Wang, Energy storage sharing in residential communities with controllable loads for enhanced operational efficiency and profitability, *Applied Energy* 373 (2024) 123880. doi:10.1016/j.apenergy.2024.123880. (JCR Q1 IF=11.0, Accepted on July 9, 2024)

[J.2] Baligen Talihati, Shiyi Fu, Bowen Zhang, Yuqing Zhao, Yu Wang, Yaojie Sun, Community shared ES-PV system for managing electric vehicle loads via multi-agent reinforcement learning, *Applied Energy* 380 (2025) 125039. doi:10.1016/j.apenergy.2024.125039. (JCR Q1 IF=11.0, Accepted on November 25, 2024)

[J.3] Bowen Zhang, Baligen Talihati, Hongtao Fan, Yaojie Sun, Yu Wang, A dynamic carbon flow traceability framework for integrated energy systems, *Journal of Cleaner Production* 518 (2025) 145878. doi:10.1016/j.jclepro.2025.145878. (JCR Q1 IF=10.0, Accepted on May 31, 2025)

Patents:

[P.1] Yu Wang, Baligen Talihati, Yaojie Sun, Bowen Zhang. Community energy storage sharing framework with power dispatch method. China National Intellectual Property Administration (CNIPA). Patent No.20230036. Filed September 6, 2023. Patent application accepted.

[P.2] Yaojie Sun, Yuanhui Chen, Yu Wang, Baligen Talihati, Bowen Zhang. Shared energy storage - multi-producer and consumer cooperative optimization method. China National Intellectual Property Administration (CNIPA). Patent No.20230003. Filed February 10, 2023. Patent application accepted.

RESEARCH EXPERIENCE

Community Energy Management Systems **Sept. 2023 – June. 2024**

Graduate Researcher, Artificial Intelligence Energy Control Laboratory, Fudan University

Shanghai, CHN

- Prof. Yaojie Sun, Supervisor
- Community Energy Management Systems Based on Multi-Agent Reinforcement Learning.

Modeling: Developed a Community Energy Management System model using Python and Pytorch, based on Multi-Agent Reinforcement Learning.

System Evaluation: Assessed system effectiveness using multiple metrics, including solar self-consumption rates and cost reduction percentages.

Battery Experimentation: Acquired accurate battery parameters from real-world tests using battery testing equipment (CT-8016). Implemented an enhanced self-calibrating model for battery behavior to mirror real-world conditions more closely.

Contribution: The proposed energy system successfully managed increasing loads from community electric vehicles, enhancing solar self-consumption by 66.41%, and reducing electricity costs by 7.73%, with a total load support capacity of 38.68%.

Carbon Neutral Project in Industrial Park

Dec. 2022 – June. 2024

Graduate Researcher, State Grid Jiangsu Company

Nanjing, CHN

- Prof. Yaojie Sun, Supervisor
- Developed microgrid models based on Autonomous Cooperative Mode, Cooperative Storage Mode, and Integrated Storage Mode.

Evaluation Mechanism: Established a robust evaluation mechanism for energy devices in the park, focusing on shared storage systems to ensure operational efficiency and sustainability.

Contribute: Assisted in a 100-million RMB (approximately 14 million USD) project led by the State Grid. The project aimed for smooth progress, on-time delivery, and minimization of potential conflicts.

Implementation and Impact: The shared storage-based systems were implemented at a factory site in Nanjing, where their carbon footprint was assessed to verify their effectiveness in promoting carbon neutrality.

WORK EXPERIENCE

Industrial AI Algorithm Application Intern, Siemens

Sept. 2024 – Mar. 2025

Siemens Digital R&D Center

Shanghai, CHN

- Acquired proficiency in AI algorithms for industrial equipment anomaly detection, enhancing understanding of machine learning principles, types of industrial anomalies, and their root causes.
- Performed data processing tasks for equipment anomaly data, ensuring accurate analysis and timely insights for preventive measures.
- **Technical Proficiency:** Developed expertise in Python and scikit-learn libraries, utilizing advanced algorithms to improve system diagnostics and operational efficiency.

Substation Secondary Protection Maintenance, State Grid

July. 2020 – Oct. 2021

Urumqi Power Supply Company

Urumqi, CHN

- Responsible for the inspection and routine maintenance of secondary protection devices at 13 substations in Urumqi.
- Actively participated in daily company operations, including assisting with inspections and company promotion activities.
- **Technical Proficiency:** Developed a solid understanding of control circuits for secondary protection devices, cultivated strong communication and teamwork skills, and became proficient in PPT, video editing, and web presentation tools.

FELLOWSHIPS AND AWARDS

Shanghai Municipal Outstanding Graduate Award

Awarded for outstanding research performance

Sept. 2022 – Apr. 2025

Corporate-Sponsored Scholarship, approximately \$1100

Awarded for outstanding research performance

Sept. 2023 – Sept. 2024

Outstanding Student Scholarship, approximately \$1200

Awarded for outstanding academic performance

Sept. 2018 – Jun. 2019

TEACHING ASSISTANT

Electronic Methods

Mar. 2023 – June. 2023

Instructor: Assoc. Researcher Yu Wang, Fudan University

Shanghai, CHN

- Credit: 3; Class: 37 juniors
- Led tutorial sessions, graded assignments, answered course-related questions, graded the final exam papers, and assisted in grade calculation.

Assisted with undergraduate thesis projects

Mar. 2024 – June. 2024

Instructor: Assoc. Researcher Yu Wang, Fudan University

Shanghai, CHN

- Assisted senior undergraduate students in finalizing their thesis topics, answered thesis-related questions, provided coding assistance, and helped optimize their thesis defense presentations.

SKILLS & LANGUAGES

Proficient in Coding: Python, MATLAB, $\text{\LaTeX}$.

Languages: Mandarin(Native), Kazakh Language(Native), English(IELTS: Overall 7.0)