Qilin Xu

Undergraduate of Electrical Engineering

University of Cincinnati & Chongqing University

Joint Engineering Co-op Institute program, Class of 2026

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Links: Github, LinkedIn

GPA	Rank	TOEFL	GRE
3.94/4.00	1%	105/120	331/340

RESEARCH PROJECTS

- **RA | MARS Lab | Wuhan University** **May. 2024 - Present**
  - **Focus:** Multimodel machine learning, pattern recognition
- **Group Leader | Electrical Engineering Lab | Chongqing University** **Jan. 2023 - Present**

  Energy consumption mode mining and exception identification of power users based on self-supervised learning
  - **Algorithm Development:** Construct and optimize **SOM** self-organizing map neural network model to mine energy consumption patterns of power users and identify abnormal energy consumption behaviors.
  - **Algorithm Implementation:** Implement algorithms through **PyTorch** and **MATLAB**.
  - **Research Basics:** Use R language for visualization, write technical reports, and create PPTs to report milestone progress to relevant grid companies. **One manuscript is in preparation**.
  - **Collaboration and Communication:** Serve as the leader of the internship team, organize weekly punchcards and progress reports for team members, and assist team members with algorithm development and programming.
- **Member | Electrical Engineering Lab | Chongqing University** **Mar. 2021 - Nov. 2023**

  Identification and prediction method of meteorologically sensitive loads in power supply station areas
  - **Algorithm Development:** Established a **GNN**, **SVM**, and **LSTM** hybrid neural network power load identification and prediction model to analyze the actual municipal grid power load big data and predict the long- and short-term time series power load curve.
  - **Research Basics:** Produced the project's mid-term and final defense PPT and proofread the main framework, content, and format of the project's technical reports.

INTERNSHIP & PRACTICAL EXPERIENCE

- **Internship | Power System Analysis Intern** **Aug. 2023 - Dec. 2023**

  Tsinghua Sichuan Energy Internet Research Institute
  - **Algorithm Development:** Established and optimized SFR power system frequency response model with a parameter identification method based on **GNN** to analyze large-scale renewable energy access's impact on system inertia and frequency.
  - **Algorithm Implementation:** Implemented the algorithms with **PyTorch**. The results were verified by PSD-BPA simulation. **Established models were applied to the industrial power grid scenarios**.
  - **Collaboration and Communication:** Participated in milestone reports for partner companies. Wrote technical reports, feasibility study reports, technical declaration forms, milestone report PPTs, and other materials for several research institute projects. Participated in writing and visualizing project-related papers.
- **Team Leader | Meritorious Winner (6%)** **Feb. 2023 (3 Days)**

  The Interdisciplinary Contest in Modeling (ICM)
  - **Algorithm Development:** Established and optimized an **AHP-EWM** analytical model.

- **Algorithm Implementation:** Implemented algorithms using **Python**. Analyzed the causes of light pollution from the spatial scale, established light pollution assessment indexes, proposed feasible methods to solve light pollution, and evaluated the methods using the FAST model.
- **Research Basics:** Built the framework of the competition **English paper**. Wrote the abstract, table of contents, introduction, summary, and part of the model introduction. Used MATLAB and R for visualization.

RELEVANT SKILLS

- **Programming Languages**
  - Possesses a high level of proficiency in **Python** and can produce high-quality code in **Pytorch**
  - **C++** (4.0/4.0 in a relevant course)
  - **MATLAB** (4.0/4.0 in all relevant courses)
  - Able to perform certain functions of the **C language**
- **Tools**
  - **LaTeX** (4.0/4.0 in a relevant course)
  - Proficient in the use of Microsoft Office software
  - Proficient in using certain Adobe graphic layout software, including PS, Ai, and iD
  - Skilled in using data visualization software such as SPSS, R, and Tableau

AWARDS & COMPETITIONS

- **National Scholarship** (Only **1 person** for the year-round grade) Oct. 2022
- Meritorious Winner of the Interdisciplinary Contest in Modeling (6%) May 2023
- Outstanding Winner of National English Competition for College Students (1%) Feb. 2023

- Outstanding Student for the 2022-2023 Academic Year of Chongqing University (1%) May 2023
- The First Class Comprehensive Scholarship of Chongqing University (1%) Apr. 2023
- The Second Prize of the Chinese Undergraduate Mathematics Competitions Mar. 2023
- The Third Prize of the China International College Students Innovation and Entrepreneurship Competition Feb. 2023
- Outstanding Student for the 2021-2022 Academic Year of Chongqing University (1%) Nov. 2022
- The First Class Comprehensive Scholarship of Chongqing University (1%) Sept. 2022

RELEVANT COURSES

- Programming for SECS (4.0/4.0) | Engineering Models II (4.0/4.0) | Engineering Models I (4.0/4.0) **Modeling**
- Multi-variable Calculus (99/100) | Calculus II (95/100) | Calculus I (97/100) | Linear Algebra (4.0/4.0) **Mathematics**