

# Mingyang Bao

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## EDUCATION BACKGROUND

**Huazhong University of Science and Technology(HUST)** 2021 Sep. - 2025 Jun.

► **Bachelor of Engineering** GPA: 4.3/5  
**College:** School of Electrical and Electronic Engineering(SEE)  
**Major:** Electrical and Electronic Engineering  
**Courses:** Electrical Machinery Theory, Electric Drive and Control Systems

## SKILLS

**English:** CET-6

Python Nodejs Javascript Golang C/C++  
 Matlab FEMM Ansys Photoshop Illustrator

## RESEARCH EXPERIENCE

**Hi-Motor Series** 2022 Mar. - now

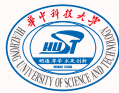
- **Leader/Fullstack Developer**
- Lead a 16-undergraduate team for software development, related research and business collaboration.
  - Develop *hi-motor designer* for design and optimization of high-efficiency motors, especially synchronous reluctance motors based on Python and Femm.
  - Support intelligent selection of high-efficiency motors with motor database and knowledge sharing platform based on MongoDB, Nodejs and Golang.
  - achieve 2 papers, 2 patents and register 2 software copyrights totally.

**Design and Optimization of Flux-Barrier End shape in Synchronous Reluctance Motor Based on B-spines** 2023 Aug. - 2023 Sep.

- **Primary Person**
- Propose a novel design method of flux-barrier end shape based on B-spline curves.
  - achieve an effective electro-mechanical co-optimization workflow with sensitivity analysis, surrogate model, intelligent algorithms and multi-level optimization.

**Summer Internship, Bosch (China) Investment Ltd.** 2023 Jul. - 2023 Aug.

- **Fullstack Developer** CR/RMD-AP, Shanghai, China
- Set up an optimization workflow for switched reluctance motors based on Ansys Maxwell and optiSLang.
  - Develop tools for acquisition and analysis of automobile sales data in Python.
  - Provide technical support for colleagues on project management, data analysis and artificial intelligence.



## HONORS AND AWARDS

### IEEE Student Conference on Electric Machines and Systems

2023 Dec. 7 - 9

- ▶ **Best Presenter Award**      Huzhou, China
- ▶ **Sieyuan Scholarship** (8/412)      ▶ **Self-improvement Student** (7/412)

## EXTRACURRICULAR ACTIVITIES

### Wuhan Voltworks Science and Technology Ltd.

2024 Jan. - now

- ▶ **CEO/Chairman**      Leadership
- Promote the development and application of *Hi-Motor Series*.

### Association for Mathematical Modeling, HUST

2022 Oct. - 2023 Sep.

- ▶ **Vice President**      Mathematical Modeling/Event Planing
- Organize school-wide and cross-school lectures for contests like MCM/ICM.
- Participate in textbook and video course development in mathematical modeling.

### Publicity Department, Student Union of SEEE, HUST

2022 Sep. - 2023 Aug.

- ▶ **Minister**      Writing/Graphic Design
- Generate positive publicity and media coverage of students and major events, such as the 70th anniversary celebration.

## PUBLICATIONS

**J** Journal

**C** Conference

**P** Patent

**S** Software Copyright

- C** **M. Bao**, Y. Wang, C. Mao, J. Li, S. Feng, T. He, Y. Chen and R. Qu, “Novel Design Method of Flux-Barrier End Shape of Synchronous Reluctance Motor Based on B-spline Curves”, *2023 IEEE 6th Student Conference on Electric Machines and Systems (SCEMS)*, Huzhou, China, pp. 1--8, Dec. 2023, doi: <https://doi.org/10.1109/SCEMS60579.2023.10379317>
- C** T. He, Y. Wang, **M. Bao**, J. Li, S. Feng and R. Qu, “Design and Validation of a High-Efficiency Synchronous Reluctance Motor”, *2023 IEEE 26th International Conference on Electric Machines and Systems (ICEMS)*, Zhuhai, China, pp. 1--8, Nov. 2023, doi: <https://doi.org/10.1109/ICEMS59686.2023.10345091>
- P** Y. Wang, J. Li, X. Li, **M. Bao** and R. Qu, “Rotor with Adjacent Electrode Mirror Image of Synchronous Reluctance Motor and Permanent Magnet Assisted Synchronous Reluctance Motor”, China Patent, Publication, No. CN116722678A, Sep. 2023
- P** Y. Wang, X. Li, J. Li, **M. Bao** and R. Qu, “A Permanent Magnet Assisted Synchronous Reluctance Motor of Low Torque Ripple”, China Patent, Publication, No. CN116505683B, Apr. 2023
- S** **M. Bao**, S. Lu and Y. Wang, “Hi-Motor Hub: intelligent Selection Tool for High-efficiency Motors V1.0”, China Software Copyright, Publication, No. 2023SR1417580, Nov. 2023
- S** **M. Bao**, J. Li, Y. Chen and Y. Wang, “Hi-Motor Designer: intelligent Software for Design and Optimization of Synchronous Reluctance Motor V1.0”, China Software Copyright, Publication, No. 2023SR0446741, Apr. 2023

## REFEREES

- ▶ Yawei Wang (supervisor), Associate Professor of Huazhong University of Science and Technology, [yaweiwang@hust.edu.cn](mailto:yaweiwang@hust.edu.cn)
- ▶ Ronghai Qu (supervisor), Professor of Huazhong University of Science and Technology, [ronghaiqu@hust.edu.cn](mailto:ronghaiqu@hust.edu.cn)