Congyu Wang

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Education

- **Xi'an Jiaotong University** — Xi'an, Shaanxi
  Undergrad, Strengthening Basic Disciplines Program of Physics — *Sep 2021 - July 2025 (expected)*
  - **Average Score**: 84.18/100, ranking 12th out of 75 in the Department
  - **Fundamental Physics(Mechanics)**:93/**Fundamental Physics(Electromagnetism)**:95/**Fundamental Physics(Thermal Physics)**:94/**Method of Mathematical Physics**:92/**Analog Electronics**:88/**Thermodynamics and Statistical Physics**:94/**Quantum Mechanics**:87/**Computational Physics and Programming**:90

Research Interests

- **Semiconductors**: Photovoltaics, Semiconductor materials and devices
- **Machine learning**: Deep Learning, CNNs

Experience

- **Xi'an Jiaotong University** — Xi'an, Shaanxi
  Research Assistant - Prof. Hong Yang — *spring 2023 - Current*
  - **Research on Semiconductor Photovoltaic Component Modeling (HIJ)**: Conducting research on Semiconductor Photovoltaic Component Modeling (HIJ), including parameter investigation and the construction of HIJ series resistance models.
  - **Utilization of Machine Learning Techniques for Parameter Evaluation**: Developed a precise method for measuring the temperature of solar panel surfaces using infrared imaging, facilitated by machine learning techniques. This innovative approach effectively addresses the challenge of accurately measuring temperatures across series-connected solar panels, significantly improving diagnostic and maintenance capabilities for photovoltaic systems.
  - **Photovoltaic Power Generation Efficiency and Reliability Analysis**: Engaged in advanced modeling and analytical testing of photovoltaic module power to assess the impact on reliability evaluations. This research focused on uncovering the underlying mechanisms affecting photovoltaic module performance, aimed at enhancing the stability and efficiency of photovoltaic systems. Contributions have led to several publications in IEEE journals, highlighting significant advancements in photovoltaic power generation research.
- **Xi'an Jiaotong University** — Xi'an, Shaanxi
  Research Trainee - Prof. Shuhong Wang — *Sept 2022 - Mar 2023*
  - **Electronic Technical Practice**: Participated in an intensive research training program focusing on the principles of circuit design, electromagnetic field simulation, and programming. Engaged in the development and testing of innovative circuit configurations, utilizing advanced simulation tools to predict electromagnetic behavior and optimize performance.
- **Xi'an Jiaotong University - Engineering Workshop** — Xi'an, Shaanxi
  Intern — *June 2023 - July 2023*
  - **Electronic Technical Practice**: Engaged in an intensive Electronic Technical Practice from June 2023 to July 2024, focusing on acquiring and honing skills in electrical engineering techniques, including soldering, digital circuit design, and microcontroller programming. Achieved an outstanding completion standard (Grade A), demonstrating proficiency and a high level of competence in practical electrical engineering applications.

Skills Summary

- **Languages**: good command of English (CET-6: 603, IELTS: 7.0), Chinese (native speaker)
- **Programming**: proficient in MATLAB, python, and LaTeX. Basic proficiency in C++ programming.

Publications and preprints

- Fengqin He, Qi Yang, Hongmin Han, Xin Huang, Qian Yang, Chenhui Nan, **Congyu Wang**, and Hong Yang, "Effect of errors in power output on reliability evaluation for photovoltaic modules,"Proceedings of the IEEE AEEES 2024, 2024.

Honors and Awards

- **National Encouragement Scholarship**
  Ministry of Education of the People's Republic of China *2023 fall*
  - Awarded based on academic performance (GPA) and comprehensive development
  - This scholarship is worth 5000 CNY.

- **Xi'an Jiaotong University Institutional Scholarship**
  Xi'an Jiaotong University *2021 fall*
  - This scholarship is awarded based on GPA ranking.
  - This scholarship is worth 2000 CNY.

- **Undergraduate Innovation and Entrepreneurship Project**
  Xi'an Jiaotong University *2024 Spring*
  - This project aims remote Monitoring Technology for Photovoltaic Cell Power Based on Machine Learning Techniques.
  - This project provided a fund of 3000 CNY.