Xiaoyu Fu

Xi'an Jiaotong University
Tel: (+86) 18928722364; Email: xiaoyufu2004@gmail.com

EDUCATION

Xi'an Jiaotong University-Shaanxi, China July 2022-Present
Bachelor of Engineering in Energy and Power Engineering **(Honors, Qian Xuesen Class)**
Minor: Automation, **GPA: 3.90**/4.30, **Rank: 1**/33
Coursework: Thermodynamics, Digital and Analog Circuits, Numerical Analysis, Operation Research
University of California, Berkeley-California, USA Aug 2024-Dec 2024
BGA Program Semester Exchange
Coursework: Heat Transfer (A+), Modeling and Simulation of Advanced Manufacturing Processes (A), Machine Learning Tools for Modeling Energy Transport and Conversion Processes (A)

RESEARCH EXPERIENCE

National-level Undergraduate Innovation Program Apr 2024-May 2025
"Multi-Timescale Optimization for Energy Systems Based on Hierarchical Reinforcement Learning"
Project Leader

- Integrated mathematical programming into DDPG to solve multi-timescale dispatch.
- Compared scheduling strategies and solving performance with Hierarchical PPO and GLPK solver.
- Evaluated algorithm robustness under renewable energy uncertainty using Latin Hypercube Sampling.

Undergraduate Innovation Competition, Xi'an Jiaotong University Nov 2023-May 2024
"Integrated Energy System Optimization for a Photovoltaic-Hydrogen-Silicon Industrial Park"
Project Leader

- Developed a digital twin model in Julia for integrated energy system simulation.
- Implemented NSGA-II and mathematical programming for capacity and scheduling optimization.
- Performed multi-criteria performance evaluation using Entropy-TOPSIS analysis.

National-level Undergraduate Innovation Program Apr 2024-May 2025
"S*olid Particle Control in Photo-Thermal Emitters via Ultrasonic Phased Array"*

- Designed PCB-integrated ultrasonic transducer arrays and used FPGA to regulate the voltage amplitude and phase of the transducers, enabling directional levitation and manipulation of particles.
- Built a photo-thermal emitter prototype integrated with the ultrasonic array.

Undergraduate Research Apprentice Program, UC Berkeley Sep 2024-Apr 2025
"*Policy Evaluation for Building Decarbonization in California's Bay Area"*

- Designed PV generation forecast model and quantified impacts of PV installation policy on emission reduction and net present value in a given city in California.
- Processed datasets using Pandas; automated analyses with Google Sheets and ChatGPT API.

ADDITIONAL EXPERIENCE

Lincoln College Summer Academic Program–Oxford University, UK Aug 2023

- Studied Fluid Mechanics and awarded distinction certificate.

AWARDS

First Prize, China Undergraduate Mathematical Contest in Modeling Nov 2024
Top Prize, Undergraduate Innovation Competition, Xi'an Jiaotong University May 2024
Outstanding Student, Xi'an Jiaotong University Nov 2024
Second-Class Scholarship, Xi'an Jiaotong University Nov 2023

LANGUAGES & SKILLS

English: IELTS: 7.5, CET-4: 639, CET-6: 549
Programming: Python (Numpy, Pandas, PyTorch, Pyomo), Julia (JuMP), MATLAB, Arduino, ESP32
Research Tools: Latex, Zotero, Markdown