

Shengdong Xue

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Education

- Purdue University**, BS in Electrical Engineering Jan 2024 – May 2027
- Cumulative GPA: 3.83/4.0 (Dean's List 2024 – Present)
- China Three Gorges University** (Transferred Out) Sept 2022 – Jan 2024
- BS in Electrical Engineering and its Automation
- GPA: 3.6/4.0

Experience

- Undergraduate Researcher** | West Lafayette, IN Aug 2026 – Present
Purdue University | Advisor: Prof. Junjie Qin
- Disaggregated EIA-930 hourly balancing-authority demand into bus-level load profiles for synthetic grids.
 - Investigating learning-based methods to accelerate bus-level hosting-capacity calculations.
- Undergraduate Researcher** | Notre Dame, IN June 2026 – Aug 2026
University of Notre Dame | Advisor: Prof. Kaiyu Fu
- Designed six-layer PCBs integrating analog measurement circuits, a STM32 microcontroller, and power supplies.
 - Selected components, developed schematics and layouts, and prepared Gerber and drill files for fabrication.
- Teaching Assistant** | West Lafayette, IN Aug 2025 – May 2026
Purdue University
- Supported instruction in *ENGR 131 & 132: Transforming Ideas to Innovation*, Purdue's First-Year Engineering courses.
 - Guided students in engineering design, MATLAB/Python programming, and team-based activities.

Projects

- NextGW: Power Grid Hosting Capacity** | Purdue University Aug 2026 – Present
- Evaluating grid hosting capacity for large loads, including data centers, under network operating constraints.
 - Incorporating hourly bus-level demand profiles to capture temporal variation in available hosting capacity.
 - Exploring supervised learning and learning-to-optimize methods using solved cases to accelerate capacity assessment.
- 16-Channel Potentiostat and Electrode Multiplexer** | University of Notre Dame June 2026 – Aug 2026
- Platform combines 16-channel electrochemical sensing with an 8:1 relay multiplexer for configurable electrode routing.
 - Design supports programmable current ranges from ± 100 nA to ± 100 μ A and a ± 3 V potential range.
 - Integrates relay-based switching for low-leakage signal routing and protected power delivery with ± 10 V analog rails.
- Campus Safety Design Project** Awarded "Best Innovation" | Purdue University Summer 2024
- Collaborated with a multidisciplinary team to redesign a campus crosswalk for improved pedestrian safety.
 - Incorporated projected light spots into the crosswalk design to provide visual warnings for pedestrians.
 - Used SolidWorks 3D modeling and MATLAB simulations to support design development and prototyping.

Presentations

Shengdong Xue. "An Integrated 16-Channel Potentiostat Platform Enables Parallel Electrochemical Measurements."
Poster presented at the *2026 Summer Undergraduate Research Symposium*, University of Notre Dame, Notre Dame, IN, July 22, 2026.

Skills

Programming: C, Python, MATLAB

Software & Tools: KiCad, LTspice, Simulink, SolidWorks, Arduino, LaTeX

Hardware: Schematic Design, Multilayer PCB Layout, Analog Circuits, SPI/I2C

Languages: Mandarin (native), English (professional proficiency)