

Sidhant Gurung

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EDUCATION

The University of Texas at Arlington

Bachelor of Science in Electrical Engineering

Expected Graduation: May 2027

- GPA: 3.75

- Awards: Dean's List; HKN Nominee; NSCS Invitee

- Relevant Coursework: Embedded Systems, Circuit Analysis II, Power System Stability & Control, Analog & Passive Signals

WORK EXPERIENCE

Pulsed Power and Energy Laboratory, Undergraduate Research Assistant; Arlington, TX

February 2026 - Present

- Discharged 64V battery systems using a voltage-matched power supplies and regulated load current achieving full discharge in 30 minutes to support energy storage characterization research.
- Operated precision lab instrumentation including multimeters and programmable power supplies for data acquisition and system diagnostics in high-voltage experimental environments.
- Collaborated with a team of 5+ and faculty researchers to analyze experimental results and refine test procedures.

Kura Sushi, Head Server; Euless, TX

January 2025 - Present

- Lead a team of 5+ servers while managing \$10K+ in daily revenue and ensuring efficient workflow.
- Coordinate inventory management and optimize table turnover procedures, reducing customer wait times by 15%.
- Manage end-of-day cash reconciliation for daily transactions averaging \$10K+, maintaining 100% accuracy across 50+ shifts.

PROJECTS

Haptic Focus Assistant

ESP32-C3, Bluetooth Low Energy (BLE), PWM, GPIO, Git, Li-Po Power Systems, C++

- Designing a BLE-enabled wearable using an **ESP32-C3** microcontroller to reduce digital distraction via real-time haptic and audio feedback.
- Programming **GPIO** and **PWM** control routines to drive haptic and audio outputs with user-configurable duration limits and 3 alert intensity levels.
- Designing a 3D-printed wearable enclosure in **Fusion 360** optimized for ergonomic fit and component accessibility.

AI Heart Rate Tracker

ESP32 PPG Sensor Integration, GSR Sensing, I2C, ADC, Data Logging, TensorFlow, Python

- Designing a biometric system integrating **PPG** and **GSR** sensors with an **ESP32** for stress and anxiety detection.
- Developing a real-time signal processing pipeline with digital filtering and peak detection targeting 95%+ heart rate accuracy at 10Hz sampling.
- Using serial monitor output to debug sensor readings and verify **I2C** communication between the ESP32 and peripherals.

Temperature Dependent Speed Controller

Arduino IDE, C++, LTspice, Fusion 360, I2C, UART, SPI, PWM, AutoCAD

- Developed an Arduino-based PID temperature controller driving a DC motor via **PWM** with real-time sensor input and serial monitoring in **C++**.
- Achieved ±2°C thermal regulation accuracy and 2-second step response through iterative **PID** parameter optimization across 20+ test runs.
- Created enclosure and PCB designs in **Fusion 360** and **AutoCAD** optimizing power distribution, trace routing, and airflow.

LEADERSHIP & COMMUNITY INVOLVEMENT

Institute of Electrical and Electronics Engineers; Power and Energy Society (IEEE-PES) – Student Member

August 2024 – Present

- Participated in 5+ IEEE workshops and networking events on embedded systems and power engineering.
- Engaged with IEEE-PES focusing on power systems, sustainable energy, and grid modernization.

Society of Asian Scientists and Engineers (SASE) – Student Member

August 2025-Present

- Contributing member fostering diversity and inclusion in engineering with 50+ active student members across campus.
- Attended professional development events and mentorship sessions connected with industry professionals.

Additional Involvement: ACM, KCA, SEAS

SKILLS

Languages: C, C++, MATLAB, Python.

Embedded Systems: GPIO, ADC, PWM, I2C, SPI, UART, BLE.

Hardware: Oscilloscope, Signal Conditioning, Sensors (PPG, GSR).

Design & Tools: Circuit Design & Analysis, PCB Layout, Control Systems, LTspice, Fusion 360, Lab Instrumentation, Soldering.