

# 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 supply and regulated load current achieving full discharge in 30 minutes.
- Operated multimeters, and power supplies during battery discharge testing to support data acquisition and system diagnostics.
- 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 (IEEE) – 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:** Lab Instrumentation, Oscilloscope, Signal Conditioning, Sensors (PPG, GSR).

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