

# Sidhant Gurung

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## EDUCATION

### The University of Texas at Arlington

Expected Graduation: May 2027

*Bachelor of Science in Electrical Engineering*

- 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

- Conducted research on pulsed power and energy systems, focusing on high-voltage discharge and energy transfer.
- Assisted with instrumentation, diagnostics, and data acquisition for laboratory research projects
- Collaborated with a team of graduate students 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  $\pm 2^{\circ}\text{C}$  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.