GOWTHAM.C

✉ gowtham66247@gmail.com 📞 +91 6384744186 📍 Coimbatore, India in Gowtham.C

Electronics and Communication Engineering student with strong skills in embedded systems, robotics, and IoT development. Experienced in real-time microcontrollers, and sensor based automation. Recognized at the e-Yantra Innovation Challenge at IIT Bombay, with practical exposure to autonomous vehicle, biomedical delta robotic arm,and a patented for smart acoustic rootworm repellent solution. Passionate about building scalable hardware–software systems and solving real world engineering problems.

⚙ TECHNICAL SKILL

- **Control Systems:** PID Control.
- **Sensor Fusion:** IMU Integration, Encoder based Feedback, Inertial Navigation Systems, Sensor Calibration,
- **Robotics & Motion Control:** Trajectory Planning, Actuator Control
- **Embedded Systems:** C/C++,Arduino,PIC,Stm32, ESP32, Communication Protocols (UART, I2C, SPI), Basic Real-Time Operating Systems (RTOS).
- **Troubleshooting:** Fault diagnosis, debugging, repair
- **Tools & Simulation:** Keiluvisions, Mplab ide, Proteus,Matlab.

💼 PROFESSIONAL EXPERIENCE

e-Yantra — Robotics Intern
May - July 2025 —IIT Bombay, India

- Developed a self-balancing robot using PID control for real-time stability.
- Implemented obstacle avoidance for autonomous navigation.
- Applied control systems, sensor fusion, and feedback mechanisms in robotic applications.

Pumo Technovation — Internship Training in Embedded Systems
Jul 2025 – Oct 2025 — Coimbatore, India

- Hands-on training with8051, PIC, ARM Cortex, and STM32 microcontrollers.
- Worked withKeil, MPLAB, STM32CubeIDE, and Proteus for coding, debugging, and simulations.
- Built projects in embedded C, focusing on hardware interfacing and real-time applications.

🛡 PATENT PUBLICATION

Real time system for rootworm repellence (RRR)
Patent number: 202544096163—october 2025
A smart acoustic pest-control solution leveraging ESP32 and wireless sensing for eco-friendly sugarcane farming.

🏅 AWARDS & ACHIEVEMENTS

e-Yantra Summer Internship	**2025**
IIT Bombay	
PALS InnoWAH Competition	**2025**
IIT Madras	
Vidya Innovation & Incubation Centre	**2025**
Tamil Nadu	
e-Yantra Innovation Challenge – Awardee	**2024**
IIT Bombay	

⌁ PROJECTS

Acoustic Rootworm Repellent 🔗

- Developed ESP32-based real-time system for smart sugarcane farming with acoustic worm repellent.
- Implemented ESP-NOW communication for wireless soil and worm data sharing across crop rows.
- Designed low-frequency repellent signals ensuring energy-efficient, crop-safe, and sustainable worm control

Biomedical Waste Segregation System 🔗

- Designed an automated waste segregation system using a delta robotic arm.
- Implemented PID control algorithm for precise robotic arm position and pick-and-place actuation.
- Interfaced machine-vision camera, servo motors, and motor drivers with the microcontroller unit.
- Implemented UART, I²C, and SPI communication protocols for reliable data exchange between sensors, controllers, and actuators.

Self-Balancing Robot with Obstacle Avoidance 🔗

- Designed and implemented a self-balancing robot using PID control and also basic LQR for real-time stability.
- Integrated obstacle avoidance algorithms, enabling autonomous navigation.
- Applied control systems, sensor fusion, encoder feedback, actuator control techniques and Odometry-navigation.

LED Matrix Display Using STM32F411RE 🔗

- Designed and built a 10x10 LED matrix display (hands-on) using the STM32F411RE microcontroller, with a level shifter for 3.3V–5V compatibility.
- Implemented multiplexing and shift-register (74HC595) control logic in Embedded C, ensuring smooth and flicker-free operation.
- Displayed dynamic names and patterns on the matrix, demonstrating skills in animation design, bit-wise data handling, and hardware–software integration.

🎓 EDUCATION

B.E Electronics and Communication Engineering
KIT-Kalaignar Karunanidhi Institution of Technology
Nov 2022 – May 2026 — Coimbatore, India
AKT Academy Matriculation Higher Secondary School
Jun 2021 – Apr 2022 — Kallakurichi, India