Thilak S

thilakjo.com LinkedIn | GitHub | Twitter

Summary

Undergrad specializing in Embedded Systems and Firmware Programming. Hands-on experience in STM32 control systems, CAN communication, and low-level programming. Skilled at designing self-calibrating hardware solutions and advanced debugging.

Technical Skills

Languages:	Embedded C, Verilog, C, C++, Java, Python, MATLAB
Microcontrollers:	STM32, Raspberry Pi
Protocols:	UART, I2C, SPI, CAN (Basic), AUTOSAR (Limited)
Tools / IDEs:	Keil uVision, STM32CubeIDE, MATLAB Simulink, Git
Debugging:	JTAG, Oscilloscope, Logic Analyzer

Projects

Real-Time Object and Sound Classification System Raspberry Pi, Python, TensorFlow Lite

- Built on Raspberry Pi for real-time environmental sound and object detection.
- Integrated custom YOLO for imagery and Keras-based audio classification.

STM32 Single-Axis Gyro Auto Calibrator STM32, MPU6050, PID Control

- Engineered a self-calibrating gyroscope system with PID motor control.
- Developed firmware to auto-tune and maintain zero-degree offset dynamically.

Bridge Rectifier Using ExpEYES ExpEYES, Circuit Simulation

- Designed a high-precision wave measurement system via Wien bridge oscillator.
- Created real-time visualization of frequency data for educational analysis.

Education

- **Rashtreeya Vidyalaya College of Engineering, Bangalore (2022–2026)**
  Bachelor of Engineering in Electronics and Communication, CGPA: 7.50
- **Indian Institute of Technology Madras, Chennai (2023–2026)**
  Bachelor of Science in Data Science and Applications, Ongoing
- **The Learning Centre PU College, Mangalore (2022)**
  Higher Secondary Education, 85.3%
- **Kendriya Vidyalaya, Hassan (2020)**
  Secondary School Education, 91.8%

Leadership

- **Cultural House Captain, Kendriya Vidyalaya, Hassan (2020)**
  Led cultural events for 500+ students and coordinated between students and faculty.