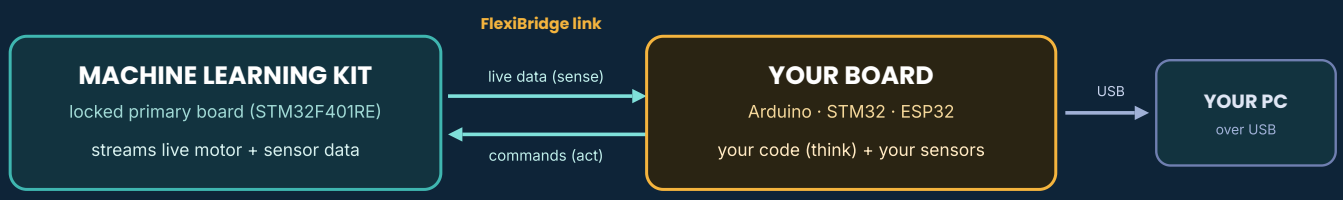
HARDWARE ADD-ON · CARIMO MACHINE LEARNING KIT

TWO BOARDS. ONE LIVE LOOP.

Turn a single-board kit into an open two-board platform. One board stays locked and streams live data. The other is yours to program.

18+ BOARDS SUPPORTED

How it works: a locked foundation, an open board, one live link



Sense on the locked board, **think** in your own code, **act** on the real motor. A closed loop students can build on, but never break.

A ONE OF A KIND ADD-ON FOR EMBEDDED SYSTEMS, EDGE AI, ROBOTICS & MECHATRONICS LABS

IN ONE BREATH

FlexiBridge takes students from reading a sensor to building a real system. It pairs a **locked, always-working board** that streams live motor and sensor data with a **completely open board** the student programs. A live, two-way link lets them sense real data, decide in their own code, and act on the motor: real closed-loop intelligent systems, on hardware they can never break.

2 boards
one locked, one open

Real-time
live two-way link

On-device
intelligence, no cloud

Sense, think, act, extend

1
SENSE
Live motor and sensor data streams from the locked board.

2
THINK
Your own code on the open board decides what to do next.

3
ACT
Send commands back and drive the real motor, live.

4
EXTEND
Add your own sensors and grow the system further.

A foundation students can't break

The core board is locked and always working, so students experiment freely on the open board without ever risking the hardware or the low-level wiring. Safe to explore, real enough to matter.

What students master

Embedded systems
Real microcontroller hardware and live data streams.

Sensor fusion
Combine multiple data sources into one usable signal.

Real-time control
Feedback strategies that drive a real motor, live.

On-device intelligence
Lightweight decisions running on hardware, not the cloud.

System-level thinking
Hardware, data and software as one connected pipeline.

See it in action



A locked CARIMO ML Kit board linked to an open ST Nucleo, sensing and acting on live hardware.

What you can build on the edge

- ✓ **Machine learning.** Anomaly detection, classification and regression.
- ✓ **Predictive maintenance.** Catch faults before they happen.
- ✓ **Reinforcement learning.** Agents that learn on real hardware.
- ✓ **Classical, MPC & fuzzy control.** Real-time feedback on the motor.

Bring almost any board

Arduino
Due, Mega 2560, Leonardo, Nano 33 IoT, Giga R1.
5V boards use a simple level shifter

STM32
Blue Pill, Black Pill, Nucleo F401 / F446, Discovery.
All 3.3V, direct connection

ESP32
WROOM-32, S3, C3, C6.
3.3V, plus WiFi / BT for wireless designs

The golden rule: any board with two or more hardware UARTs and 3.3V logic (or a level shifter) works. Easiest picks: STM32 Blue Pill, ESP32-WROOM-32, or Arduino Due.

What you need

FlexiBridge
The add-on: primary-board firmware plus a guided wiring setup. Runs on your bench, nothing to install online.

The kit
CARIMO Machine Learning Kit, which carries the locked primary board that streams live data.

Your board + PC
Any compatible secondary board (Arduino, STM32 or ESP32) and a PC connected over USB.

Bridge sensing, thinking and acting on real hardware. Give your students an industry-grade edge.

Part of the CARIMO learning-kit family, built on a 15-year education heritage at IIT Bombay

Request a demo or quote | www.carimotech.com | contact@carimo.tech | +91 90823 97027

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