



Motion Activated Model Train

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Description

A model train that automatically starts when visitors approach and stops automatically after three loops.

System Overview

Inputs: PIR Motion Sensor, Reed Switch

Controller: ESP32-C3 Super Mini

Output: L298N H-Bridge, TFT Display

How It Works

- A PIR motion sensor detects visitors.
- The Controller starts the train (through the H-Bridge) and counts laps using a reed switch (activated by a magnet placed under the train).
- After three loops, the train slows down and stops automatically.
- A display shows motion status, train status, reed switch activity, and remaining loops.

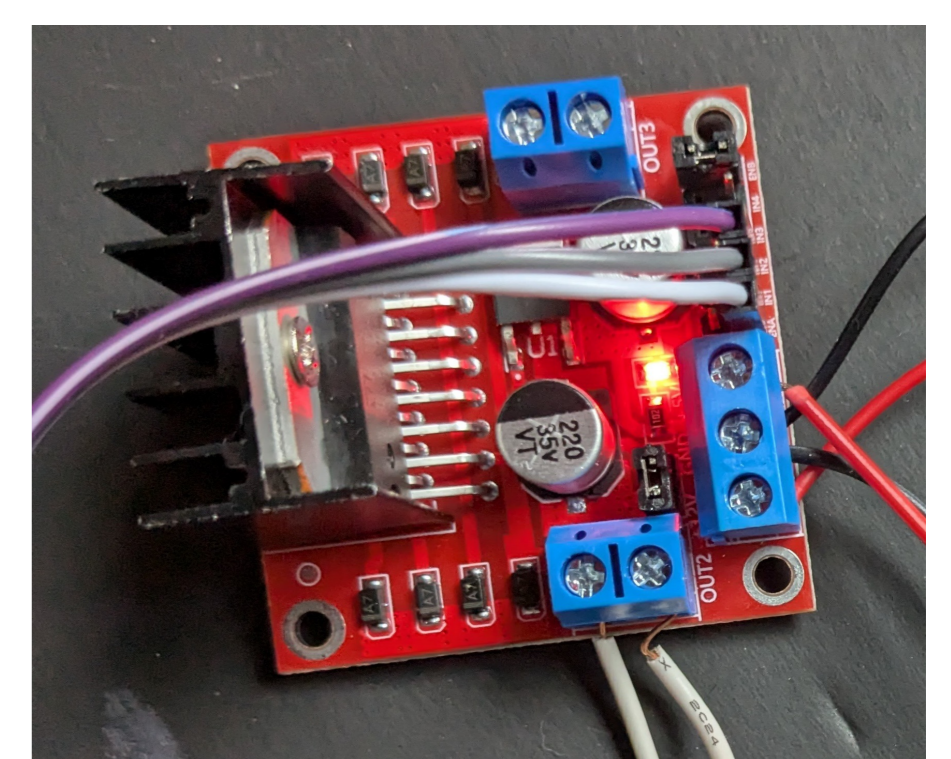
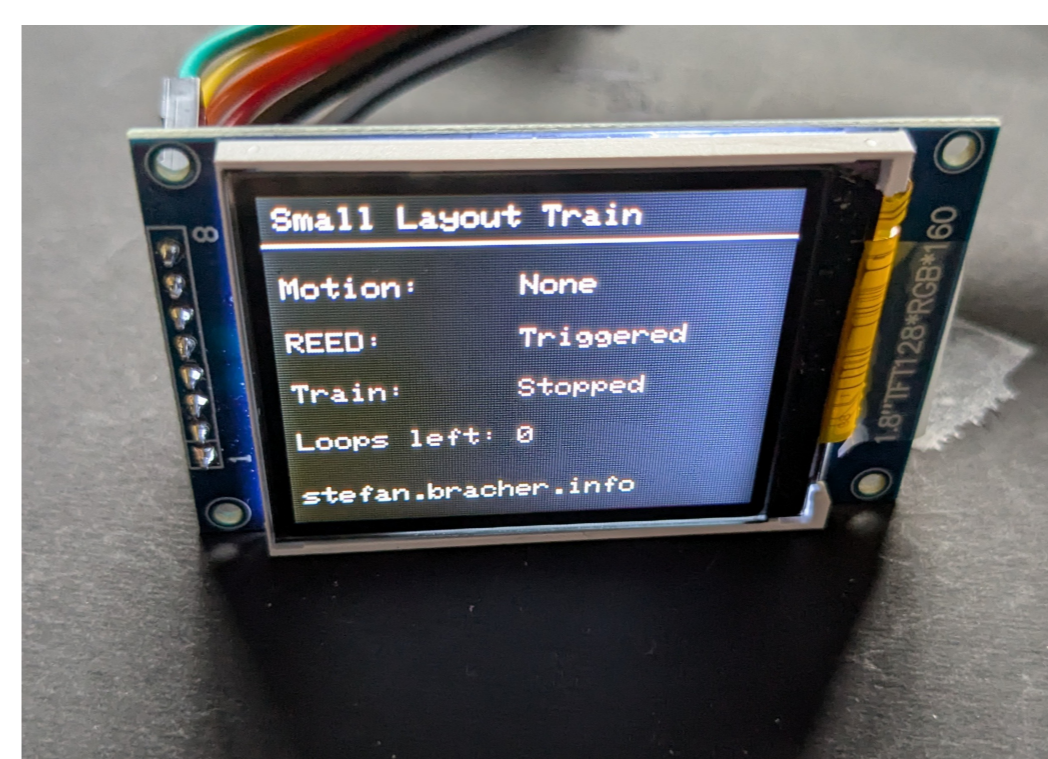
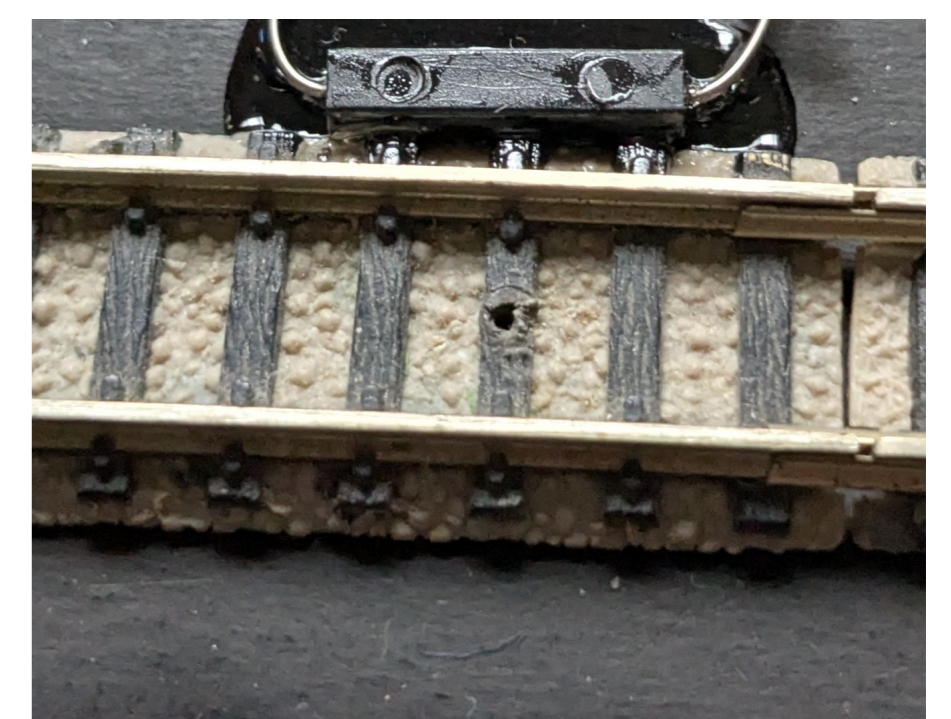
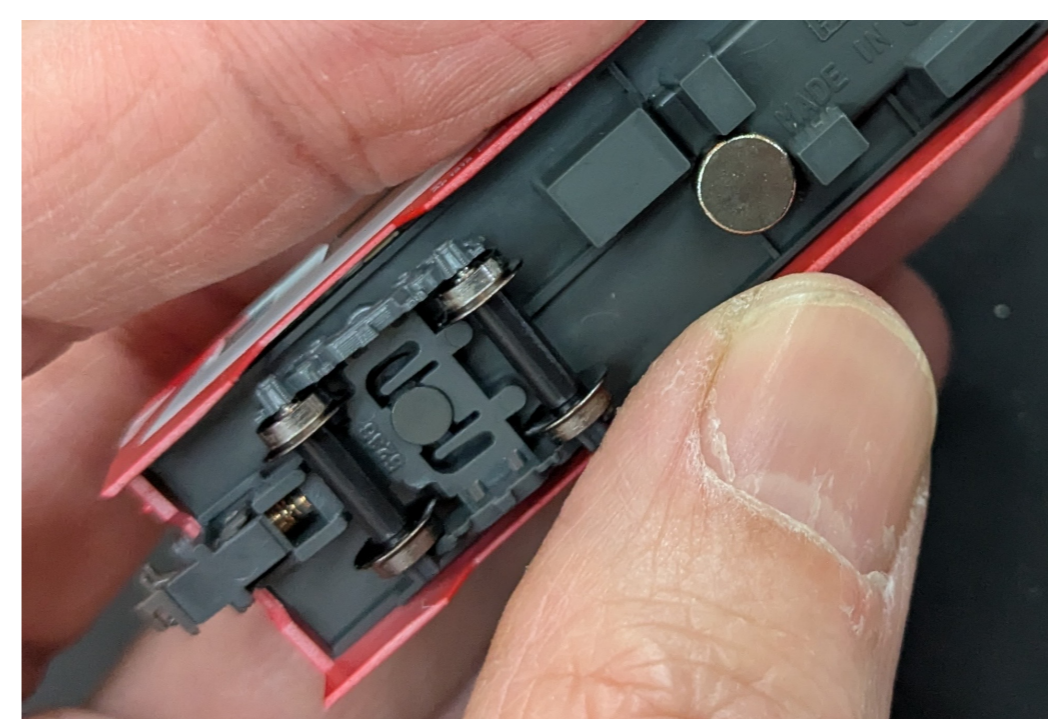
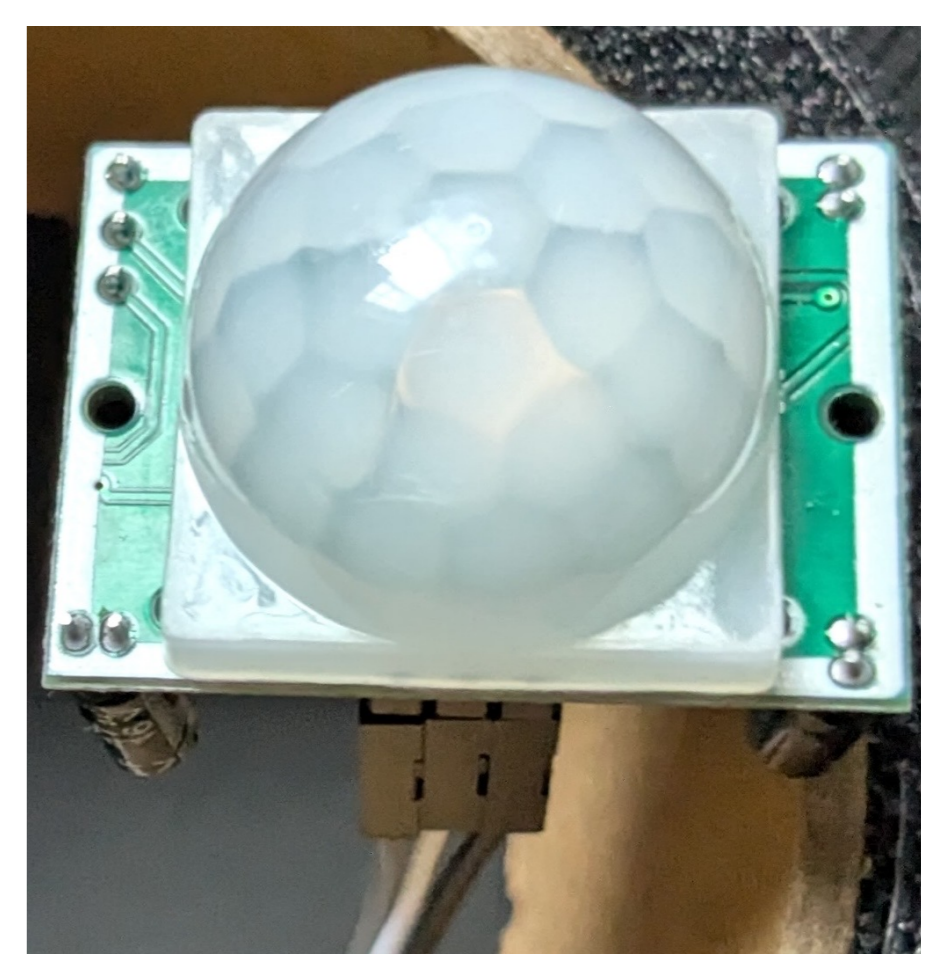
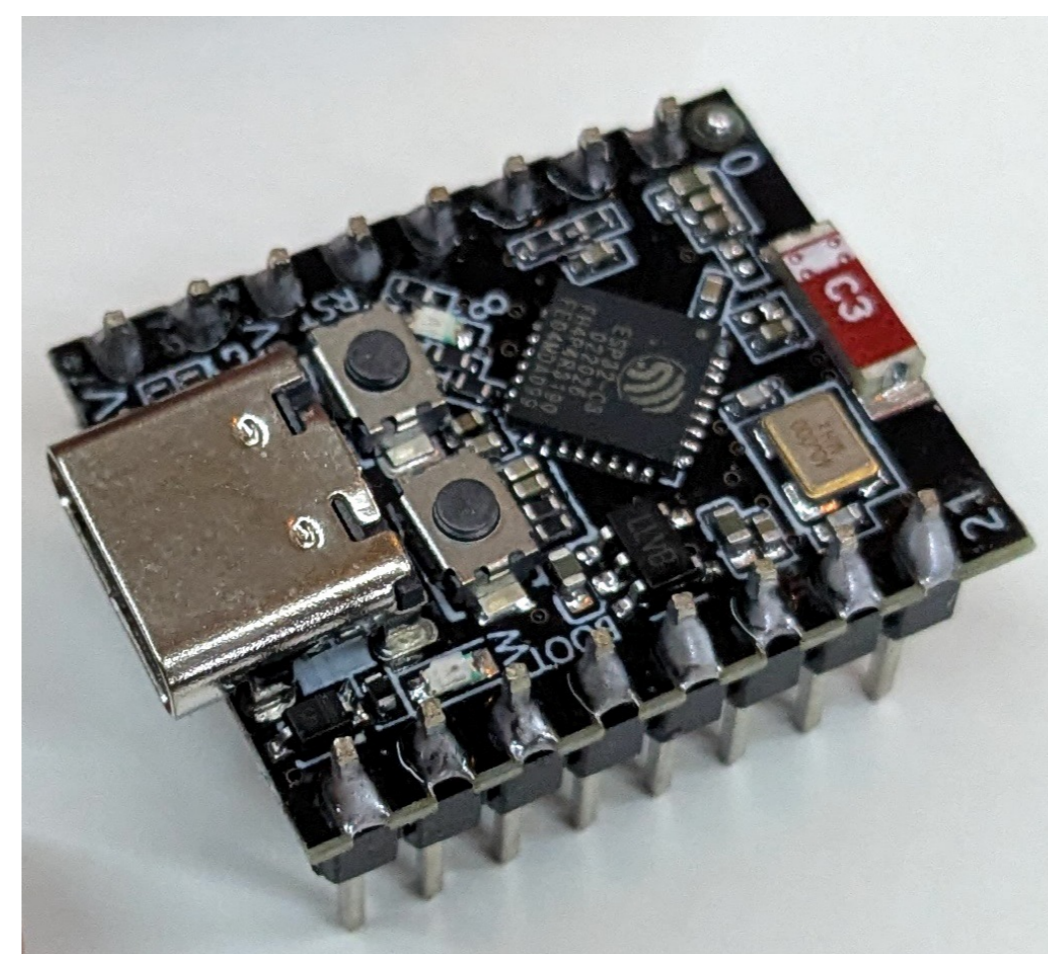
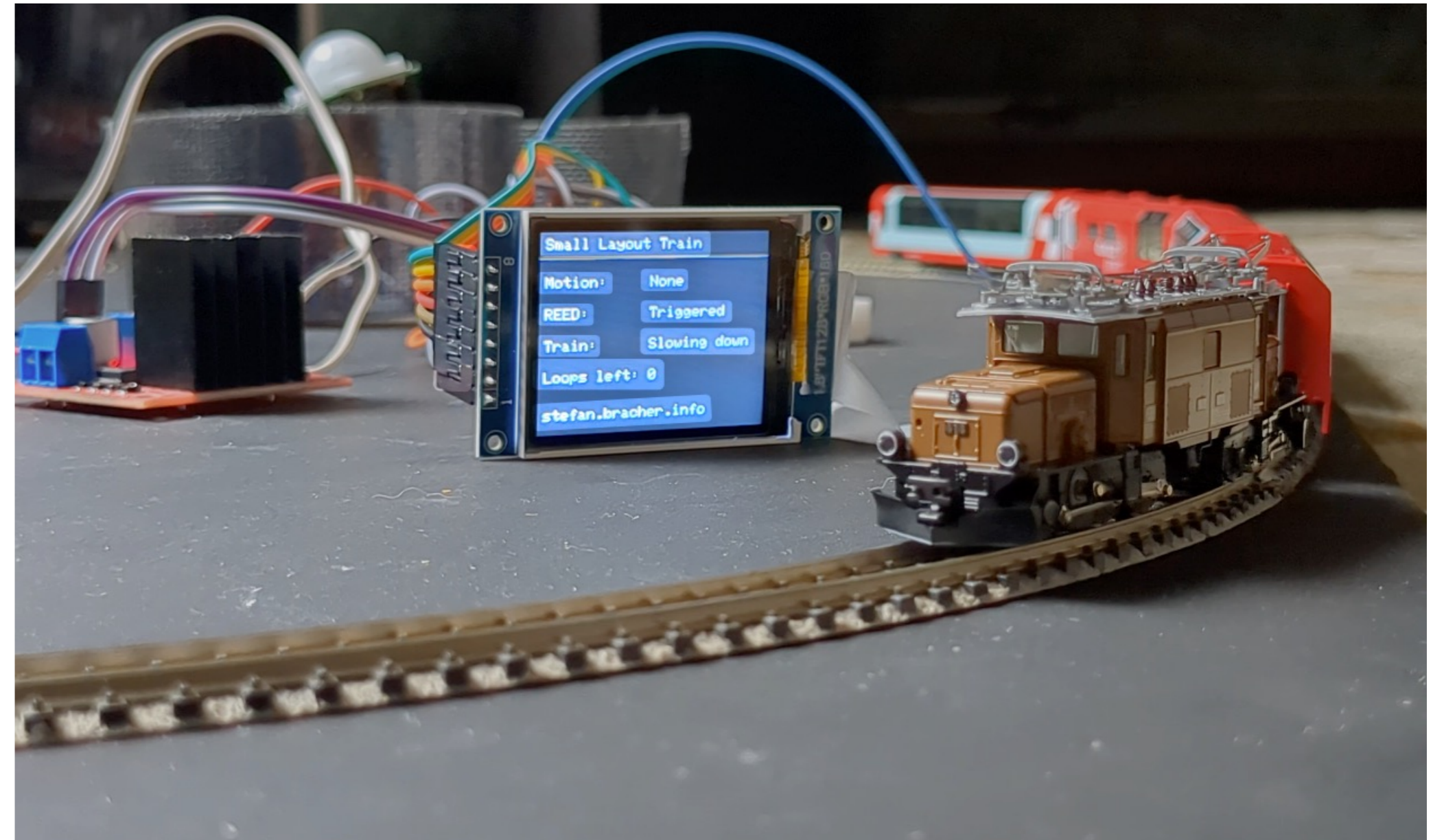
Results

Train starts only when needed and stops automatically.

Takeaways

- First use of the ESP32-C3 Super Mini
- Detected Motion with a PIR Sensor
- Located the train reliably with a Reed Switch
- Displayed useful information on a TFT Display

Photos



Project Link

