



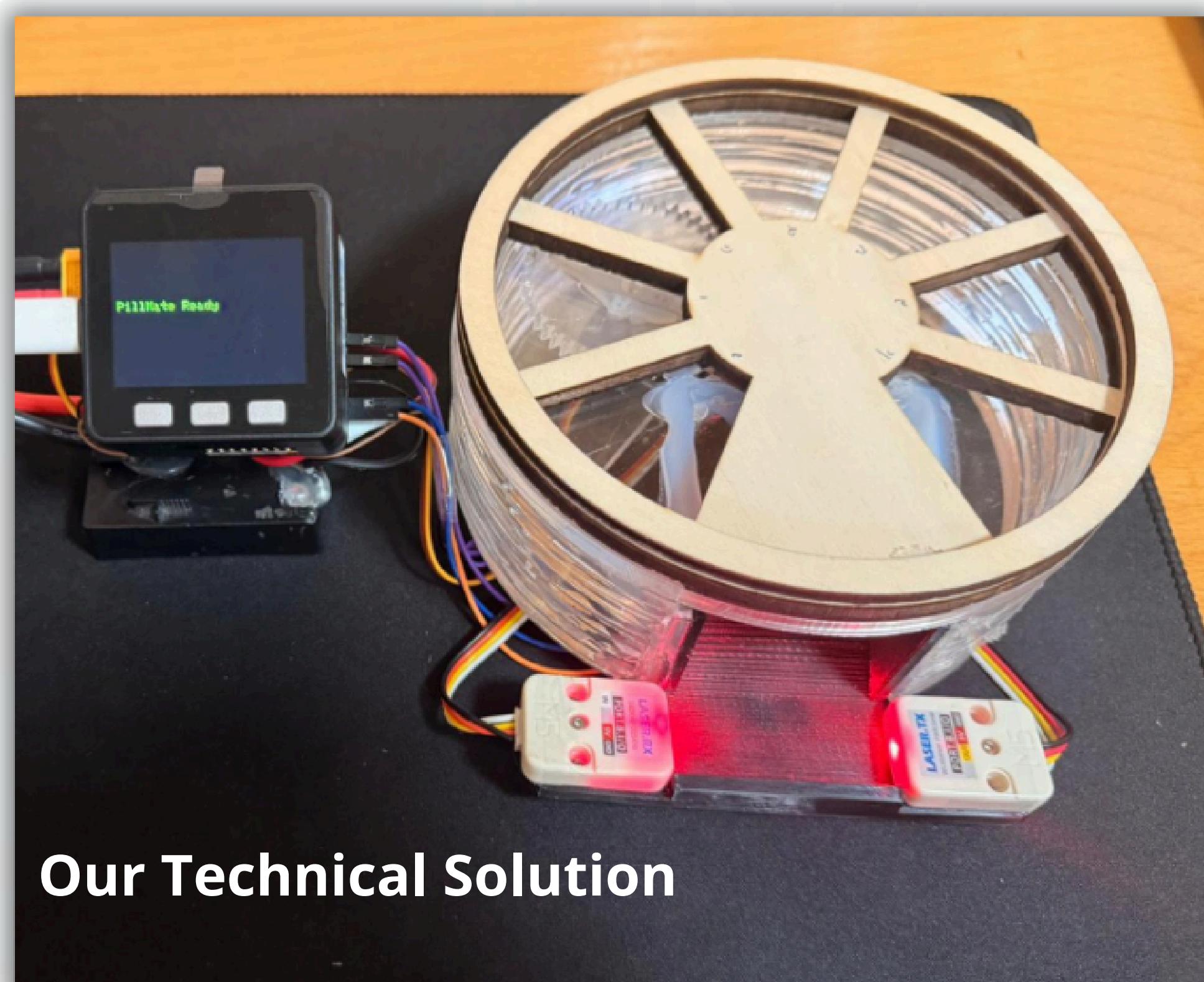
PILLMATE

PillMate: Smart Medication System



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Our Technical Solution

Hardware: ESP32(M5Stack),servo-driven dispensing, and laser sensors .

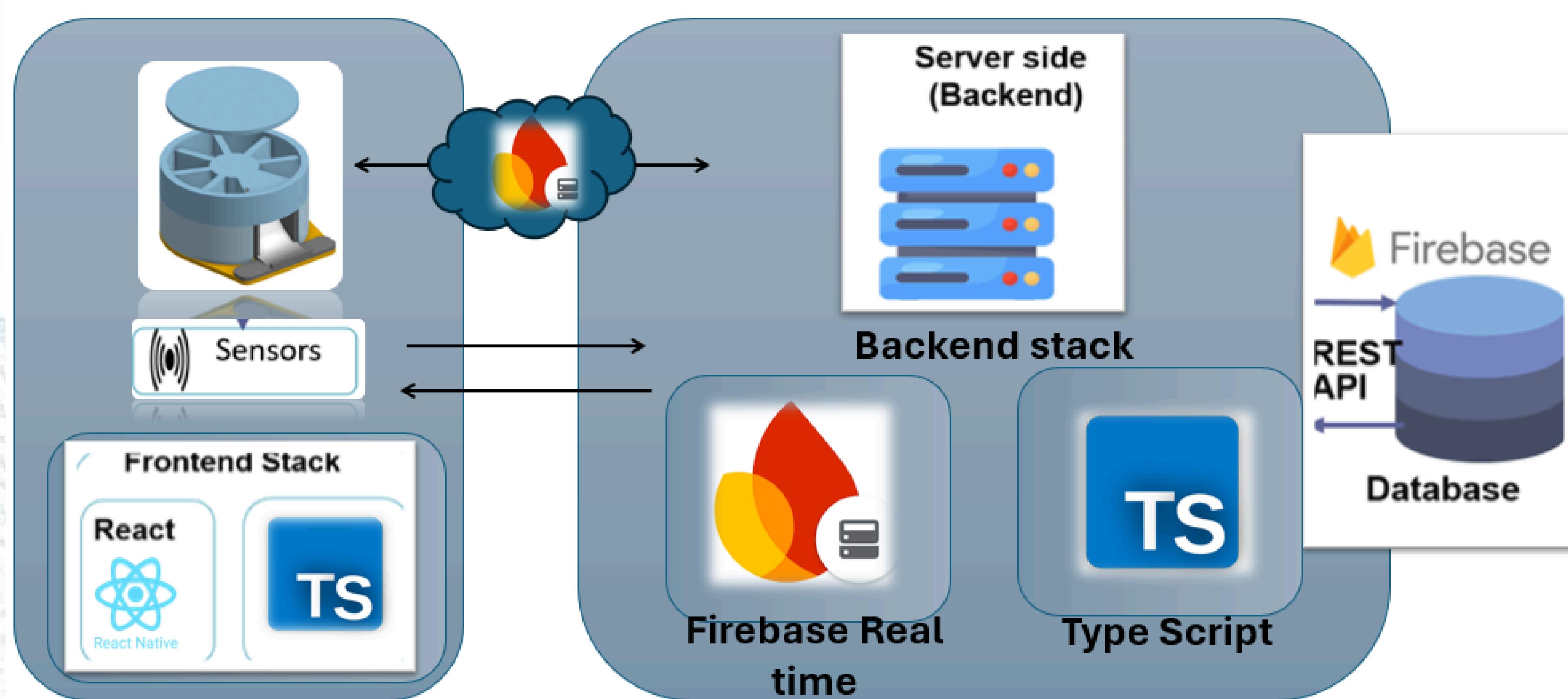


Introduction & Motivation

To prevent health risks caused by medication non-adherence, elderly patients need an intelligent, reliable solution. So we have built **PillMate**, an automated system that not only reminds patients to take their medication at the correct time but also verifies that it has been taken, significantly improving treatment adherence.

System Requirements

- Functional: Auto-dispensing, physical intake verification, and real-time cloud alerts.
- Non-Functional: 90%+ reliability, user-friendly UI, and low-latency sync.



System Architect



Medication Assistant

know about 1 of your medications

Is it safe to use aspirin with codical

Codical contains codeine and paracetamol. Aspirin is a different type of pain reliever known as a nonsteroidal anti-inflammatory drug (NSAID). When used together, aspirin and codical can increase the risk of side effects such as stomach ulcers, bleeding, and liver damage.

It is important to consult with your healthcare provider before combining these medications to ensure safety and effectiveness. They can provide personalized advice based on your medical history and current conditions.

Ok thank you

You're welcome! If you have any more questions or need further assistance in the future, feel free to reach out. Take care and stay safe!

Ask about medications, interactions, or schedules...

IoT Software

Our Solution

1. Remind
Alerts users when it's time to take medication.
2. Dispense & Verify
Automatically dispenses the dose and confirms intake.
3. Monitor & Assist (AI)
AI chat assistant provides medicine guidance.

Performance Metrics

92%
Accuracy

<4s
Latency

• **Inventory:** Precise tracking of 30+ doses.

Implementation details

A laser-beam sensor at the output tray confirms successful delivery, closing the loop between "command" and "action."

Challenges & Constraints

- **Mechanical Jams:** Motor power isn't enough to overcome resistance when pills stick
- **Sensor Sensitivity:** buzzer beep sounds causing false "dose detected" readings for sensors lasers .
- **Connectivity:** Device doesn't auto-reconnect after reboot.

