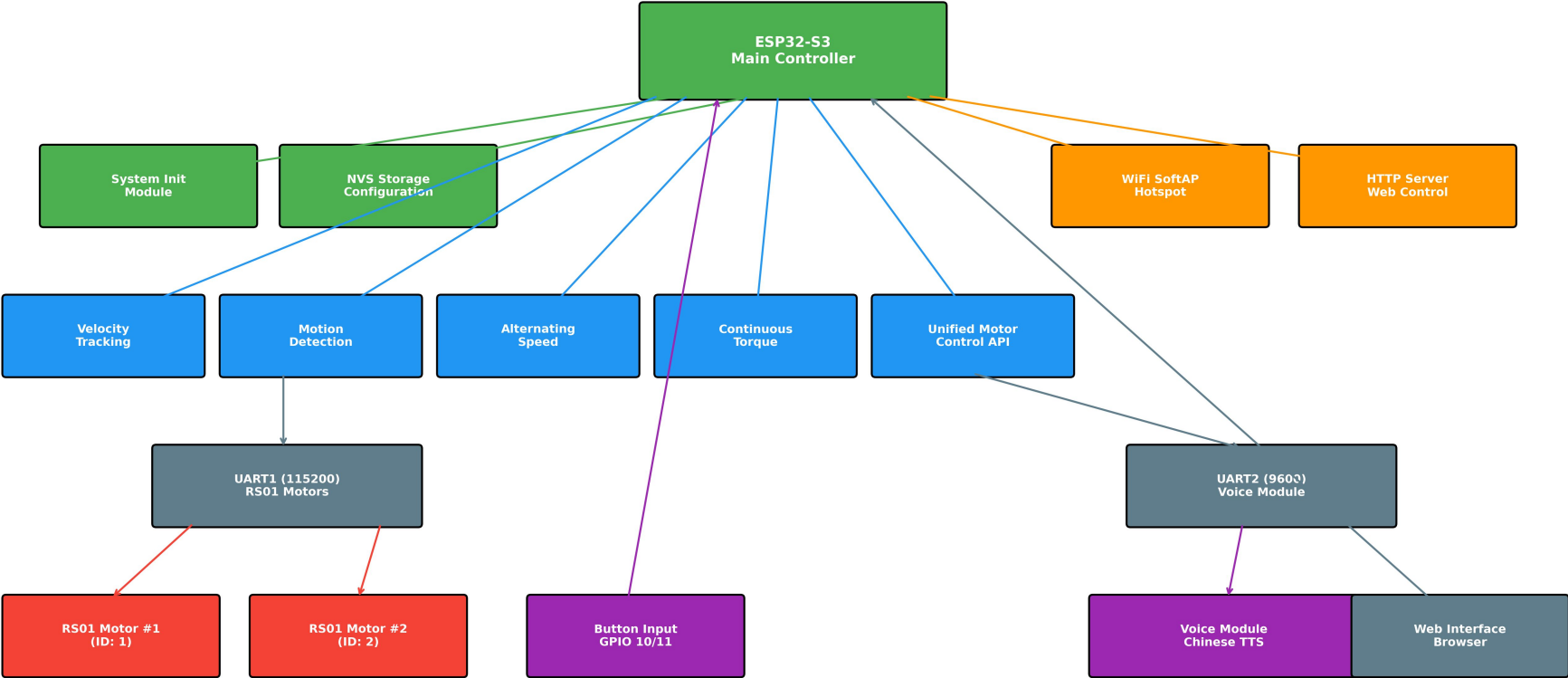


Exoskeleton WiFi Control System Architecture

ESP32-S3 Based Exoskeleton Control System



System Parameters:

- Target MCU: ESP32-S3
- WiFi Mode: SoftAP Hotspot
- Motor Protocol: CAN-to-Serial
- Position Range: ± 12.57 rad
- Velocity Range: ± 44 rad/s
- Torque Range: ± 17 Nm
- Kp Range: 0–500
- Kd Range: 0–5

Main Tasks:

- UART_Parse_Task (20ms)
- Motion_Detection_Task
- buttonProcessTask
- velocity_tracking_task
- HTTP Server Tasks

Communication:

- UART1: TX-GPIO13, RX-GPIO12
- UART2: TX-GPIO1, RX-GPIO2
- Motor CAN-ID: 1, 2
- Voice: Chinese TTS
- Web Port: 80

Legend:

Core Modules
Sensors/Input

Control Modules
Actuators

Communication
Interfaces