

Houssem Eddine Sfaxi

Ras jebal Bizerte tunisie

Embedded systems and IoT Developer passionate about embedded software development and technological innovation. Experienced in low-level programming (C, C++), Linux development, and network protocol integration for embedded systems (LoRa, MQTT, WebSocket). Proven experience in designing and testing intelligent solutions for IoT , seeking a responsible job with an opportunity for professional challenges.

EDUCATION

2019 – 2023

Bachelor's Degree in Computer Engineering - Faculty of Science of Bizerte

WORK EXPERIENCE

March.2023 – Present	Embedded Software Developer (Freelancer) <ul style="list-style-type: none">Developed drivers and low-level software for microcontrollers .Implemented real-time communication protocols and optimized system performance.Integrated IoT solutions with cloud platforms for data management and analytics.
October.2023 – Present	Robotics Trainer Creative minds , Ras jebel young science association , Club Smartech <ul style="list-style-type: none">Mentored 100+ students in robotics workshops using Arduino, sensors, and motor control systems.Designed a curriculum for IoT projects (e.g., smart home automation) adopted by 3 local science clubs.
July.2023 – March.2024	IoT & Web Developer TAC-TIC, Technopole Ghazala, Tunisia <ul style="list-style-type: none">Developed embedded software for IoT solutions and automation projects.Designed and implemented low-level drivers and network communication protocols.Created intuitive web applications for IoT monitoring using JavaScript and Node.js.

PROJECTS

Sept. 2024 – Dec. 2024	Sea Drone Project Developed an autonomous marine drone for navigation and surveillance. <ul style="list-style-type: none">Designed and implemented an embedded system for real-time data collection and transmission.Developed a web interface for remote control and telemetry data display.Integrated GPS and IMU sensors for position tracking and navigation stabilization.Controlled T200 thrusters using Arduino Mega 2560 and MQTT communication with ESP8266/ESP32-CAM. Technologies used : Arduino Mega 2560 ESP8266 ESP32-CAM GPS NEO7m MPU9250 WebSockets MQTT PWM HTML/CSS/JS
Feb. 2023 – Juin. 2023	Smart Glasses for Blind Persons Developed smart glasses for assisting visually impaired individuals. <ul style="list-style-type: none">Implemented object detection using TinyML and Edge Impulse on ESP32-CAM.Integrated real-time audio descriptions via voice synthesis (TTS) on ESP32 DevKit.Optimized recognition using FOMO (MobileNet V2) and Arduino IDE.Converted and broadcasted audio files via ESP32 GPIO and a speaker. Technologie used : ESP32-CAM ESP32 DevKit TinyML Edge Impulse MobileNetV2 FOMO Text-to-Speech (TTS) Python Audacity PCB
July. 2024 – Sep. 2024	WebSocket Server for IoT Communication Development of a WebSocket Server for Real-Time IoT Device Management <ul style="list-style-type: none">Connection management and automatic device synchronization.Transmission of real-time updates to web clients.Scalable and secure architecture for integrating multiple connected devices. Technologies used : Node.js Express.js WebSocket JavaScript AWS
Jan. 2024 – March. 2024	IoT-Based Smart Lock and Environmental Monitoring System Developed an IoT smart lock system with environmental monitoring using ESP32. <ul style="list-style-type: none">Enabled remote locking/unlocking via WebSocket and real-time sensor data exchange.Integrated temperature, humidity, dust, and sound detection sensors.Utilized FreeRTOS for efficient dual-core task management.Sent data to a remote server via HTTP API for analysis. Technologies used : ESP32, WebSocket, HTTP API, FreeRTOS, Sensor, C/C++ , PCB
Sept. 2024 – Jan. 2025	Real-Time Object Detection with OpenCV and SFTP Upload Developed a real-time object detection solution using OpenCV and MobileNet SSD on NVIDIA Jetson. <ul style="list-style-type: none">Captured multi-camera video streams and performed real-time object detection.Annotated images and stored them securely.Automated image transfer to a remote server via SFTP.Optimized performance with CUDA and TensorRT on Jetson. Technologies used : Python, OpenCV, TensorRT, JetPack SDK, CUDA, SFTP, GitHub, Scrum

TECHNICAL SKILLS

Programming Languages : C/ C++(Expert), Python, JavaScript ,Java , HTML/CSS , bash	Embedded Systems: STM32, ESP32,ESP8266 ,Raspberry Pi, FPGA (VHDL, Quartus) ,Nvidia jetson , ATtiny85, ARM Cortex-M, Nordic nRF52 , Schematic and PCB design,FreeRTOS	Networking & IoT Protocols: LoRa, MQTT , , WebSocket, Modbus, CAN, SPI, I2C, UART, Bluetooth LE, Zigbee, NB-IoT, LTE-M , GPIO ,HTTP, SSL, WIFI,LORA	Cloud Computing & Edge AI AWS , Huawei Cloud, Google Cloud IoT, Edge Impulse, TinyML, TensorFlow Lite ,NVIDIA JetPack SDK
Frameworks & Tools: Node.js, Bootstrap, React, Laravel ,STM32Cube, PlatformIO, Altium , EASYEDA	Operating Systems: Linux (Yocto & buildroot,DTS, USB/GPIOS/IIO device drivers), Windows	Other Technical Skills Git, Github ,GitLab ,Make/CMake (autotools) ,SQL	Testing & Debugging: Oscilloscope, Logic Analyzer, JTAG Debugger

INTERESTS

Volontariat : Club SMARTECH | Ras Jebal Youth Science Association | Club Alchemist

LANGUAGES

Arabic : Native | English : Fluent | French : Fluent | Spanish : Basic | German : Basic

CONTACT