

Profile

As an embedded systems developer, I thrive in environments that challenge my creativity and adaptability. With a strong foundation in designing and implementing embedded solutions, I excel at quickly learning new technologies and applying innovative approaches to solve complex problems. Passionate about continuous learning and professional growth, I am always eager to embrace new challenges and contribute to innovative projects.

Education

Faculty of Sciences of Monastir

- Master's Degree in Embedded Systems

Faculty of Sciences of Monastir

- Bachelor's Degree in Embedded Systems

Secondary High School 9 April 1938

- Mathematics Baccalaureate

Professional Experience

Feb 2024 – May 2024

IrWise (Startup)

Embedded Systems Developer

- Developed firmware for a LoRa sniffer using RFM96/98 modules and Raspberry Pi, enabling robust packet capture and analysis.
- Designed a user-friendly graphical interface for module configuration, real-time data visualization (RSSI, SNR, reception time), and packet transmission.

Projects

VoiceBot: Voice-Controlled Assistant

<https://github.com/hadil-ftini/VoiceBot>

- Developed a Python-based voice assistant that responds to spoken commands, integrates text-to-speech, and performs real-time object detection.
- Designed an interactive Kivy-based GUI for user input and system feedback.
- Integrated hardware control of an ESP32 module via serial communication, enabling physical device interaction.
- **Tools:** Python, Kivy, SpeechRecognition, Pyttsx3, OpenCV, YOLOv5, Http

Firmware LoRa Sniffer

github.com/hadil-ftini/Firmware-LoRa-Sniffer

- Created firmware for a LoRa sniffer using RFM96/98 modules and Raspberry Pi 3B+, optimizing data capture and processing.
- Developed a PyQt-based GUI for real-time visualization of LoRa data and device configuration.
- **Tools:** Python, PyQt

Machine-Written Text Recognition

- Built an OCR system using PyTesseract for printed text recognition, enhanced by OpenCV image processing and a Tkinter GUI.
- **Tools:** Python, PyTesseract, OpenCV, Tkinter

STM32 TFT Message Display

- Developed a firmware solution for displaying messages on an ILI9341 TFT display using an STM32F4 microcontroller. Integrated with the SX1280ED1ZHP module for communication.
- **Tools:** C++: ILI9341

Skills

Programming Languages: Python, C++, C, HTML, CSS

Platforms: Raspberry Pi, STM32, ESP32/ESP8266, Arduino

Technologies & Tools:

- **AI & Machine Learning:** TensorFlow, PyTorch, Keras, scikit-learn, YOLOv5
- **Computer Vision & OCR:** OpenCV, PyTesseract
- **Speech & Voice:** SpeechRecognition, Pyttsx3
- **IoT & Communication:** MQTT
- **Cloud & Backend:** Firebase
- **GUI Development:** Kivy, PyQt, Tkinter
- **Other:** Git, MATLAB/Simulink