



# TÉRENCE MARCHAL

FREELANCE EMBEDDED SOFTWARE ENGINEER

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## \_ SKILLS

C Java Python STM32 Linux  
FreeRTOS 4G LTE D-Bus LwM2M  
Git Jenkins Docker 🇫🇷 🇬🇧 🇪🇸

## \_ EDUCATION

### ENSIMAG

2017 – 2020 · Grenoble

MSc in Mathematics & Computer Science

Major in Embedded Systems & Connected Devices

### UNIV. OF PENNSYLVANIA

2020 · Philadelphia

Exchange semester

### POLYTECHNIC

#### PREPARATORY CYCLE

2015 – 2017 · Nancy

BSc in Engineering Science

Major in Mathematics & Engineering Science

## \_ PERSONAL PROJECTS

### PLOTTER & IMAGE-PROCESSING SOFTWARE

CNC drawing machine

### UKULELE LEARNING APP

Chords identification



All my work experiences, personal projects, open-source repositories, videos and demonstrations are available at [www.terencemarchal.com](http://www.terencemarchal.com)

## \_ INTRO

A Software Engineer specialized in Embedded Systems & IoT, I have worked as an independent consultant since 2021.

Today, I help my clients designing and developing their embedded software. I make a point in writing well-architected code that can be maintained and reused on the long term.

My languages of predilection are C and Java, which allows me to write both low-level embedded firmware and higher-level human-interface software. I focus on writing high-quality code (i.e. no warnings, no untracked TODOs) in a proper development environment (i.e. build automation, proper git workflow, etc.) rather than functional but hastily tested and non-documented code.

A French native currently based in Nantes, I am fluent in English and have an intermediate level of Spanish, which allows me to work in an international context.

## \_ MISSIONS & WORK EXPERIENCES

/\* August 2024 – July 2025: backpack travel around the world \*/

### KELIO December 2022 – July 2024 · Nantes Area

Design, development & deployment in real-life conditions of a facial recognition access-control terminal proof-of-concept.

Integration & benchmarking of two facial recognition cameras on Arm Cortex A-53 & Android 12.

Design & development on STM32 & FreeRTOS of the 4<sup>th</sup> iteration of the company's iconic access control terminal.

Development of the network configuration-related functionalities of a Linux-based gateway through D-Bus.

### TPL SYSTÈMES March 2021 – November 2022 · Toulouse

Design & development of a Remote Administration Service for fleets of emergency sirens in the US on STM32 & FreeRTOS.

Implementation of remote monitoring & configuration, OTA firmware update through LwM2M, secure communications with PSK & MbedTLS.

Design & development of a full 4G LTE stack (UDP & TCP) with Sierra Wireless latest modules. Implementation of multiple incoming P25 audio calls prioritization.

Development of a custom-tailored server-side service for interacting with and visualizing 500+ devices. In charge of On-Premise deployment automation & maintenance through Docker-Compose.

### PARROT June 2020 – December 2020 · Paris

Work on the at the time unrevealed next-gen Anafi USA drone as part of the RF team.

Development of a testbench to measure isotropic radio sensitivity. Automatization of 4 tools including a \$100k+ Radio Communication Tester: reduced duration fivefold, improved reliability & repeatability. Development of another testbench to reproduce the impact of flight conditions on radio communications & video streaming.