

FRANCOIS BERDER

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EDUCATION

Imperial College London (London, UK) **2011 - 2015**
Master of Engineering in Computer Science

Lycée Français Charles De Gaulle (London, UK) **June 2011**
Scientific Baccalaureate with highest honours

WORK EXPERIENCE

Fulton (Remote position, working from France) **October 2023 - March 2024**
Embedded Software Engineer

Developed a controller for an electric boiler.

- Developed a bootloader for a PIC32MZ to securely update firmware from a USB stick
- Developed peripheral drivers such as ethernet/SDMMC/SPI using Microchip Harmony framework and troubleshoot hardware bugs
- Developed drivers for external chips communicating via I2C/SPI such as external RAM or IO extender

Hudl (Remote position, working from France) **April 2023 - August 2023**
Embedded Software Engineer

Contributed to the development of a Yocto device to allow over-the-air update.

- Wrote a library in C++17 to update remotely Yocto devices via AWS IoT jobs using AWS IoT SDK
- Improved UI of a Qt application written in C++ and QML to allow users to update their own devices.

Anjuna (Remote position, working from France) **July 2022 - February 2023**
Software Engineer

Contributed to the development of a software product that protects applications confidentiality and integrity by relying on Intel SGX technology.

- Fixed several bugs reported by customers by examining logs, using gdb or strace, decompiling code to x86-64 assembly...
- Wrote additional unit tests in C++ and system tests in Python
- Investigated Jenkins pipelines failures, fixed Dockerfile
- Improved tools written in Python and Go

Ajustco (Remote position, working from France) **June 2022 - December 2022**
Software Engineer

Development of a graphical user interface for configuring and running a laser marker.

- Gathered requirements from the customer
- Wrote an application in Python and Qt that interacts with a MySQL server
- Packaged a Linux application to ease distribution to the customer

Spin (Remote position, working from France) **July 2021 - December 2021**
Embedded Software Engineer

Development of an electric scooter rental service.

- Debugging firmware written in C on a STM32 running FreeRTOS
- Relied on static analysis tools: smatch, cppcheck and clang static analyzer to find
- Refactored CMake configuration files

ARM (Cambridge, UK)
Senior Software Engineer

October 2020 - May 2021

Support for a build system written in Go, Python and Bash for C and C++ software running on Linux and Android platforms.

Kynesim (Cambridge, UK)
Embedded Software Engineer

July 2017 - October 2020

Development of embedded systems solutions in a small consultancy company. Responsible for designing software architecture, implementing specifications and automated tests either alone or as part of a small team.

Key learnings:

- Experience writing firmware in C on various microcontrollers: MSP430, Cortex-M0 and Cortex-R4
- Wrote Linux applications in C++ running on TI AM3552 (ARM Cortex-A8)
- Learned how to read schematics, debug hardware prototypes

Imagination Technologies (King's Langley, UK)
Graduate Software Design Engineer

January 2016 - June 2017

- Provided support for an IoT solution named Ci40 running OpenWRT
- Created a library in C and Python to interface Ci40 with many sensors
- Wrote production test software in Python using PyQt
- Implemented drivers for PIC32 peripherals in C on Contiki and RIOT-OS

IT SKILLS

Programs created: HAL for PIC32 for RIOT-OS and MyNewt OS (upstreamed), multithreading on Cortex-M4F, IoT water pump (includes designing PCB boards in Kicad), etc. Some of these programs are available at:

<https://github.com/francois-berder>

Programming languages: C, C++, ARMv7-M assembly, Python, Bash, Go, Rust

LANGUAGES AND EXTRA CURRICULAR ACTIVITIES

Arts & Sports: Piano (10 years, Grade 8 - highest UK level), swimming, tennis, sailing, skiing

English: Fluent, **French:** Native, **Japanese:** Intermediate (JLPT Level 3)