

Julien Lefrique | Firmware Engineer

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French citizen • Married

Education

University of Technology of Belfort-Montbéliard (UTBM)

Belfort (France)

Master's degree in Electrical and Control Systems Engineering

2009

Speciality Electronic and Embedded Systems

IUT of Nancy-Brabois

Villers-lès-Nancy (France)

DUT degree in Electrical Engineering and Industrial Computing, with Upper Second-Class Honours 2006

Equivalent to a two-year technical degree

Lycée Général et Technologique Boutet de Monvel

Lunéville (France)

French Baccalauréat Mathematics and Power Systems, with First-Class Honours

2004

Equivalent to A levels in science with emphasis on Power Systems

Experience

Debiotech SA

Lausanne (Switzerland)

Research and Development Engineer

Since Jan.2010 (3 years ¹/₂)

Responsible of the firmware development of a MEMS-based insulin pump, which is remote controlled by an Android platform. Efforts are oriented toward precision, patient safety and low-power consumption (www.jewelpump.com).

- Lead developer of the firmware of the pump itself (MSP430 and STM8 microcontrollers, C and Assembly).
- Support on Android development on the Remote Control (Java).
- Development of the application used to test the electronic assemblies on the production line (Python).
- Writing of technical documentation: studies, specifications, architecture and design documents, FMEA...
- Unit and integration testing.
- Development of internal tools for instrumentation, build system, microfluidic tests... (Python, C and Shell).
- Evaluation and integration of Bluetooth and Bluetooth Low Energy stacks.
- Risk management: apply functional safety concepts.

Actia Aixia SA

Le Bourget-du-Lac (France)

Electronic Engineering Intern

Feb.2009 – Jul.2009 (6 months)

Electronic design for special vehicles and development of embedded software in C programming language. Worked on a graphic terminal built around an Infineon XE167 microcontroller.

- Port of *lwIP*, a free TCP/IP stack and development of HTTP, TFTP, Telnet and NetBIOS servers.
- Development of a SD card driver and integration of a FAT library.
- Port of the CoDeSys runtime on the platform to make the device programmable with IEC61131-3 languages.
- Development of a CAN driver.
- Electronic schematics (CADSTAR).

Galley Technologies

Chez-le-Bart (Switzerland)

Automation Engineering Intern

Sep.2007 – Feb.2008 (6 months)

Test and measurement systems development, using LabVIEW, for Swiss watchmakers.

- Acoustic measurement system for the analysis of Minute Repeater chimes.
- Torque control of a DC brushless motor to simulate a barrel mainspring.

Motorola Ltd.

Mobile Software Engineering Intern

Swindon (United Kingdom)

Feb.2006 – Apr.2006 (10 weeks)

Applications development for mobile devices in J2ME (Java 2, Micro Edition) within the framework of the European project aceMedia which is aimed at discovering and exploiting knowledge contained in media files in order to make media more accessible to users by providing a flexible means of sorting, labelling and searching.

Languages

French: Native language

English: Advanced

TOEIC in 2006 with 800 points

German: School knowledge

Computer skills

OS: GNU/Linux (Debian-based distributions), Android, Microsoft Windows, Mac OSX

Languages: C, Python, Java, Shell script, Assembly (MSP430, TMS320, 8051), C++, VHDL, LabVIEW

Version Control Systems: Git, Subversion

Microcontrollers: MSP430, STM8, C166/XE166, TMS320, PIC16/18/24, 8051

Communication: Serial communication (UART, I2C, SPI), TCP/IP, CAN

RF: Bluetooth, Bluetooth Low Energy

Serialization: MessagePack, JSON, BSON

RTOS: FreeRTOS, PICos

Word processing: Microsoft Office, LibreOffice, L^AT_EX, Lightweight markup languages

Simulation: Matlab, Simulink, Scilab, NumPy, dSPACE

Electronic: CADSTAR, Orcad, Kicad, Proteus, LTspice

PLC: CoDeSys, Step-7, PL7-2, PL7 Pro

Methodologies: Structured Analysis for Real-Time Systems, State Diagram, Sequence Diagram

Additional information

Association: Member of the Armadeus project (electronic board for embedded Linux systems on ARM9 and FPGA)

Sports: Mountain Bike, Swimming, Walking, Basket-ball, Unicycle (beginner)

Interests: Free softwares, Smartphones, Travels, Cinema

Other: Driving license and car owner