Julien Lefrique

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French citizen

Experience

Marvell Semiconductor Technology Sàrl **Etoy (Switzerland)**
Senior Software Engineer Since May.2014 (2 years 9 months)
Started as a Software Engineer in the Wireless team, promoted to Senior Software Engineer in March 2015.

- Since 2016: Work on *IEEE 802.11ac/ax (WiFi)* wireless access points for Enterprise solutions.
  - Firmware development of a multi-CPUs software-based MAC for next generation ICs.
  - Involved in the whole transmit data path.
  - HW/SW co-verification on RTL simulation and on FPGA.
- 2014 – 2015: Worked on NFC and FM solutions.
  - Firmware development in Wireless combo and standalone ICs (ROM and RAM).
  - Development of FM and NFC stacks running on the host. Android and Linux integrations.
  - Development of the firmware of a wearable device enabling NFC payments over Bluetooth Low Energy.
  - Support to Application Engineers and customers.
  - Development of internal tools (e.g. assembler tool for a custom Instruction Set Architecture).

Debiotech SA **Lausanne (Switzerland)**
Firmware Engineer Jan.2010 – Apr.2014 (4 years 4 months)
Responsible of the firmware development of a MEMS-based insulin pump, which is remote controlled by an Android platform. Efforts are oriented toward precision of the injection, patient safety and low-power consumption.

- Development of the whole firmware of the insulin pump (two microcontrollers), started from scratch and up to the clinical trials.
- Evaluation and integration of various Bluetooth and Bluetooth Low Energy stacks.
- Android development on the Remote Control.
- Writing of documentation according to *IEC 62304*: studies, requirements (SRS), architecture and design documents, FMEA, test procedures. Application of functional safety concepts for risk assessment and reduction.
- Unit and integration testing.
- Development of internal tools (e.g. automated production testing, instrumentation, build system).

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.
Worked on a graphic display used as a dashboard and on-board diagnostic system.

- 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, development of a CAN bus driver.
- Port of the *CoDeSys* runtime on the platform to make the device programmable with the *IEC 61131-3* languages.
- Electronic schematics (CADSTAR and Orcad).

Galley Technologies **Chez-le-Bart (Switzerland)**
Electrical 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. **Swindon (United Kingdom)**
Software Engineering Intern Feb.2006 – Apr.2006 (3 months)
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.

Education

University of Technology of Belfort-Montbéliard (UTBM) **Belfort (France)**
Master's degree (Diplôme d'Ingénieur), Electrical and Control Systems Engineering 2009
Speciality Electronic and Embedded Systems

University Institutes of Technology of Nancy-Brabois **Villers-lès-Nancy (France)**
DUT degree, Electrical Engineering and Industrial Computing, with High Honours (mention Bien) 2006
Equivalent to a two-year technical degree

Lycée Général et Technologique Boutet de Monvel **Lunéville (France)**
French Baccalauréat, Mathematics and Power Systems, with Highest Honours (mention Très Bien) 2004

Languages

French: Native language

English: Professional working proficiency *TOEIC in 2006 with 800 points*

German: School knowledge

Computer skills

OS: GNU/Linux (Debian and derivatives), Android, Microsoft Windows, Mac OSX

Word processing: Microsoft Office, LibreOffice, LaTeX, Lightweight markup languages (Markdown, reStructuredText, Doxygen, ...)

Languages: C, C++, Python, Java, Lua, Shell script and GNU tools (grep, sed, awk, ...), Assembly (various microcontrollers), LabVIEW

VCS: Git, Mercurial, Subversion

Continuous Integration: Jenkins, Bamboo, Gerrit

Microcontrollers: ARM Cortex-M0/M3/R7, MSP430, STM8, C166/XE166, TMS320, PIC, 8051, Arduino

RTOS: Bare metal, FreeRTOS, ThreadX

Embedded Linux: Kernel drivers, Buildroot, contributed patches to the NFC subsystem

RF: IEEE 802.11 (WiFi), NFC, FM, Bluetooth Low Energy, Bluetooth

Communication: UART, I2C, SPI, CAN, TCP/IP stack and related protocols

Hardware description languages: Basic understanding of VHDL and Verilog, HW/SW co-verification

Security: Basic understanding of secure communications (confidentiality, integrity, authentication)

Test Equipments: Oscilloscopes, Multimeters, Logic analyzers, WiFi/NFC/Bluetooth analyzers and testers, Wireshark

Data analysis: NumPy, Matplotlib, Matlab, Simulink

Modeling: Structured Analysis for Real-Time (Data Flow diagram), Sequence Diagram, State diagram

Additional information

Sports: Mountain Bike, Swimming, Walking

Interests: Free Software, Electronics, Travels, Cinema

Swiss work permit: Owner of a cross-border commuter permit (G)

Other: Driving license and car owner