Julien Lefrique

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French citizen

Experience

Debiotech SA **Lausanne (Switzerland)**
Embedded Software Engineer Since Jan.2010 (4 years)
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 (`http://www.jewelpump.com`).

- Development of the whole embedded software of the insulin pump, 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...
- Apply functional safety concepts: risk assessment and risk reduction.
- Unit and integration testing.
- Development of the application used to test the electronic assemblies on the production line.
- Development of internal tools for instrumentation, build system, microfluidic tests in clean room...

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 (`http://savannah.nongnu.org/projects/lwip`).
- 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 the IEC 61131-3 languages.
- Development of a CAN driver.
- Electronic schematics.

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. **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...)

Languages: C, C++, Python, Java, Shell script and GNU tools (grep, sed, awk...), Assembly (MSP430, TMS320, 8051), LabVIEW, Visual Basic, HTML/CSS

VCS: Git, Subversion, Mercurial

Microcontrollers: MSP430, STM8, C166/XE166, TMS320, PIC, 8051, ARM Cortex-M0, Arduino, 68k

RTOS: Bare metal, FreeRTOS, PICos

Embedded Linux: Buildroot, U-Boot

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

RF: Bluetooth, Bluetooth Low Energy

Security: Secure communications (confidentiality, integrity, authentication)

Hardware description languages: VHDL

Electronics: CADSTAR, Orcad, Kicad, Proteus, LTspice

Test Equipments: Oscilloscopes, Multimeters, Logic analyzers, Bluetooth analyzers and testers (Ellisys, Anritsu)...

Simulation: Matlab, Simulink, Scilab, NumPy, dSPACE

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

Modeling: Structured Analysis for Real-Time Systems (SA/RT), Data Flow Diagram, 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

Interests: Free Software, Electronics, Travels, Cinema

Other: Driving license and car owner