Fabien Le Mentec
Apartment 605, 30 rue Felix Esclangon
38000 Grenoble, France

Tel : 06 95 36 54 83
E-mail : `fabien.lementec@gmail.com`

May, 17th 1984
French nationality

Software and Electronics Engineer

Education

2008	**Master degree in computer science. EPITECH, Paris.**
2006	**Bachelor degree in computer science. EPITECH, Paris.**

Employment

2012 - present — **Software and Electronics engineer at ESRF**
– Data acquisition and control framework for XRay instruments
  – platform hardware and software design and implementation
  – PCIe over cable and 10GbE FPGA based DMA engine
  – high performance LINUX software stack and drivers
  – participation to XRAY instrumentation international conferences

2010 - 2012 — **Software engineer at INRIA, MOAIS group (2 years)**
– Programming high performance multicore and heterogeneous architectures
  – XKAAPI runtime design and implementation (kaapi.gforge.inria.fr)
  – lead engineer in partnership involving CEA Saclay, ANR REPDYN
  – implementation of a compiler to support parallelism constructs
  – participation to HPC international conferences

2009 — **Embedded firmware developper at Luceor (3 months)**
– 802.11 Mesh Networking
  – LINUX kernel software for Atheros Mips System On Chip

2007 - 2009 — **Software engineer at Skyrecon Systems (2 years)**
– Disk encryption solution (bios, driver)
– Network development (NDIS kernel layers)
– Windows kernel and security related research
  – Intel VT virtualization
  – AFD kernel vulnerability, CVE-2008-3464

2006 — **Embedded developer at Euriware (intern, 6 months)**
– Industrial serial buses data logger
  – LINUX kernel driver, PC104 architecture
  – TCP/IP data server and client

2008 - 2012 — **Teaching lectures. EPITA**
– Micro Kernel project
– Windows NT drivers courses
– CAN, USB courses

Publications and Reports

2010 - 2013

- *RASHPA : a Data Acquisition Framework for 2D XRays Detectors*
  - F. Le Mentec, P. Fajardo, C. Herve, A. Homs, T. Le Caer
  - ICALEPCS 2013
  - www.icalepcs2013.org/programs/abstract_details.php ?id=TUMIB07
- *The X-Kaapi's programming model and User's manual*
  - F. Le Mentec, T. Gautier, V. Danjean
  - Technical Report INRIA, 2011.
- *A Work Stealing Algorithm for Parallel Loops on Shared Cache Multicores*
  - M. Tchiboukdjian, V. Danjean, T. Gautier, F. Le Mentec and B. Raffin
  - Highly Parallel Processing on a Chip (HPPC). 2010
  - moais.imag.fr/membres/marc.tchiboukdjian/pub/hppc10.pdf
- *Adaptive Algorithms for Shared Cache on Multicore*
  - M. Tchiboukdjian, V. Danjean, T. Gautier, F. Le Mentec, B. Raffin
  - Research Report, (RR-7256) :17, INRIA, apr 2010
  - hal.inria.fr/inria-00473617/PDF/RR-7256.pdf
- *Technical Blog*
  - www.embeddedrelated.com/blogs-1/nf/fabien_le_mentec.php

Associative Experience

2010 - 2011

IGREBOT Robotic Association
- www.igrebot.fr
- EUROBOT competition
- main boards : Renesas/RX62N and SBC2410/ARM
- engine control and IO boards : DSPIC33F, DSPIC30F
- CAN and I2C communication

2010

ACONIT Association
- www.aconit.org
- PIC18F USB device to interface PC and mechanical tape readers
- project documentation : www.aconit.org/collection/documation-usb
- source repositories :
  - github.com/texane/documation_m600
  - github.com/texane/slosyn

2006

EPITA system and security laboratory
- microkernel project
- system and security teaching assistant

Open Source Projects

STLINK : STM32 discovery line LINUX programmer
- github.com/texane/stlink
- >400 users, >100 contributors

VPCIE : PCIe endpoint virtualization
- github.com/texane/vpcie

LFS : Linux From Scratch building system
- github.com/texane/lfs

NRF : wireless audio using NORDIC chipsets and ATMEGA328P
- github.com/texane/nrf

Skills

Software
- Programming languages : C/C++, Assembly, Python, VHDL
- Kernels : Linux (including realtime), UNIX, Windows NT
- Parallelism : OpenMP, TBB, CUDA. hybrid architectures (ex : NUMA, 96 cores, 8 GPUs)
- Scientific : Matlab, linear algebra, image and signal processing, classification

Architectures
- microprocessors : IA32, ARM (esp. CORTEX serie), SPARC
- microcontrollers : MIPS SoC, Microchip PICs, RX62N, AVR
- FPGAs : XILINX (VIRTEX, KINTEX series)

Networking
- TCP-IP, IPv6, Ethernet, 802.11, mesh networking (OLSR)
- PCIe, USB, CAN, I2C, SPI, serial industrial buses (MODBUS...)

Security
- symetric cryptography
- binary analysis, software and network reverse engineering

Misc
- digital electronics
- CAO (SOLIDWORKS), CNC milling, laser cutting

Languages

French Mother tongue
English TOEIC (gr. 800), good written and spoken skills (esp. technical materials)
German School notions