

# Laurent Sansonetti

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EU citizen.

## Summary

Experienced software engineer specialized in the design and implementation of low-level systems and developer tools.

15+ years of experience working in C and C++ at the system OS level (ex. UNIX).

10+ years of experience creating and shipping tools for developers (compilers, runtimes, APIs, etc).

5+ years of experience leading teams of software engineers.

## Employment

**Principal Software Engineer, Microsoft**

Remote. Apr 2017 – Present

Working for the Mobile Visual Studio team. More details later.

**Founder, CEO and Lead Software Engineer, HipByte**

Liège, Belgium. Nov 2011 - Apr 2017

Created and managed HipByte, a small developer tools company. I did both software engineering and company management. I founded the company all by myself and grew it organically to a team of 4 people serving over 7000 paid customers without raising any external funding.

Our main product was RubyMotion, a commercial toolchain to write cross-platform apps for iOS (plus macOS, watchOS, tvOS) and Android using the Ruby language, used by thousands of individuals and businesses.

From a technical point of view, RubyMotion is a sophisticated build system, an ahead-of-time LLVM-based static compiler for Ruby, and 2 implementations of the Ruby runtime, respectively for Objective-C and JVM/JNI targets, all written in C and C++.

I wrote the initial project (using the MacRuby codebase I originally created) as well as all significant features over the years. I then maintained RubyMotion with a small team of programmers I carefully recruited.

I also wrote a couple of cross-platform RubyMotion libraries (for both iOS and Android): motion-game, a cocos2d-based game framework, and Flow, a CSS-box-based UI framework, all in C and C++.

I presented RubyMotion at over 25 tech conferences, including 3 I organized myself. I received in 2015 a *Ruby Biz Grand Prix* award from the Governor of the Shimane Prefecture of Japan and Ruby's author Yukihiro Matsumoto rewarding companies utilizing the Ruby programming language to create new products and services and establish sustainable business developments.

**Senior Software Engineer, Apple**

Cupertino, CA. Jan 2006 – Nov 2011

Software engineering for the Core OS department on all releases of Mac OS X from 10.5 to 10.8 at the BSD level of numerous UNIX projects.

Created and led the MacRuby project, Apple's implementation of the Ruby language using core Mac OS X technologies, such as the Objective-C runtime, garbage collector, the Foundation and ICU frameworks and the LLVM compiler framework. Managed a small team of interns contributing to the project.

Designed and implemented BridgeSupport, a project written in Ruby, C++ and the clang parser framework, that provides metadata information (in XML) covering the system APIs to non-C languages, such as Ruby, Python & others.

Rewrote most of the RubyCocoa project, a bridge between the Ruby and Objective-C runtimes, to make it faster, more stable and maintainable, using C, Objective-C and dynamic/inline assembly (for FFI trampolines).

Created the RubyOSA project, a C extension for the Ruby runtime that allows it to access the AppleEvent infrastructure, in order to script Mac OS X applications in the same way AppleScript does.

Improved the Mac OS X Ruby stack (custom interpreter, Rails, gems), performed maintenance and applied security fixes as part of Mac OS X software updates.

Worked with various teams to improve scripting languages in developer tools: Interface Builder, Xcode, DTrace/Instruments, documentation.

Presented the projects above during annual conferences (RubyConf, WWDC, etc.).

**Software Engineer, Apple**

Paris, France. Nov 2004 – Jan 2006

Software engineering on both the backend and the user interface of iCal, iSync and an unreleased iLife application, using C++, Objective-C and Mac OS X APIs (ex. Cocoa).

**Software Engineer, Alcatel**

Namur, Belgium. Jan 2004 – Nov 2004

Development of an intelligent network (IN) service for British Telecom to regulate both incoming and outgoing calls, using C++, Java and CORBA.

**Software Developer, DataRescue**

Liège, Belgium. Feb 2002 – Nov 2003

Created in C++ several processor disassembler modules for IDA Pro, an interactive disassembler & debugger widely used by the reverse-engineering and information security industry.

Designed and implemented in Java and Objective-C the Mac version of PhotoRescue, a digital image and data recovery software.

Implemented and deployed a Web-based system to securely provide software updates to customers, using Perl and MySQL. Also maintained the local BSD and Linux servers.

## Education

**Bachelor of Computer Science, HEPL**

Liège, Belgium. 2000 – 2002

Specialized in Industrial Computer Science. Received with high honors. My final-year project was the implementation of a simple Host Intrusion Detection System for the FreeBSD kernel which was ultimately rewarded with the *Prix de la fondation André Gilles* governmental prize.

## Skills

Comfortable with: C, C++, Objective-C, compiler technologies (LLVM, clang), Ruby, Cocoa, Mac OS X, iOS, Android (including NDK), UNIX, programming language design, implementation and bridging, performance optimizations and profiling, debugging, concurrent programming.

Experience with: LISP, Perl, Java (including JNI), Web development (including CSS), cocos2d, database design and integration, Amazon Web Services, kernel development (BSD), reverse-engineering, Intel assembly, and obviously a bit of  $\text{\LaTeX}$ .

Human languages: French (native), English (bilingual), Japanese (notions).

## References

« *Laurent is one of the most talented engineers I have ever worked with, and given that I have worked in the software industry for over 25 years, that is not a statement I make lightly. He is able to quickly grasp even the most complex APIs and systems, and not just superficially but to the extent that he quickly becomes a domain expert in any technology he puts his mind to. Laurent is not just technically adept but also highly creative, able to create new languages or applications from "whole cloth" with only the vaguest of specifications and with very little guidance. He would be a key asset to any organization capable of making use of his considerable skills.* »

— Jordan Hubbard, co-founder of the FreeBSD project and Director of Core OS at Apple when managing Laurent.

« *Laurent showed his potential very quickly. A fast learner, he immediately grasped IDA Pro's architecture and started to write robust, efficient code. The processor modules created by him are still in use. Laurent is an excellent problem solver, therefore his responsibilities were not limited to programming IDA Pro. At Datarescue he was confronted with various tasks, and successfully handled all of them. Laurent is a talented professional, a bright and responsible guy. It was a pleasure to work with him.* »

— Ilfak Guilfanov, the author of IDA Pro and CTO at DataRescue when managing Laurent.

## Hobbies

Family, designing and implementing programming languages, reading science-fiction, listening to classical music, traveling, cooking, Japanese culture, "retro" video games, etc.

Last updated: April 14, 2017

<http://hipbyte.com/lrz/resume.pdf>