Romain Sacchettini(FR, 35 years old), **Software Engineer 2007-now**, open source supporter, linux/ARM/FreeRTOS C++, C, Python, Golang

Job Summary: roles, skills, achievements.

Flightcell International Ltd, NZ, 2016-now

Air Medical and Search & Rescue

Being proactive can be the difference.

Flightcell's DZMx air medical and search & rescue solution allows the aircrew and the hospital/base to be in constant contact, sharing critical patient and location information.

Role :

Embedded Software Engineer on ARM and freeRTOS STM32 based platforms, working on Helicopters and fixed wings all in one Flight tracking + Data solutions for Rescues, Police, Firefighters and military aircrafts. Products certified ISO9001 and flight critical EASA DO178, DO254 DAL D currently being implemented. Everyone is involved in the certification processes.

Achievements

Successfully Delivered forefront new features of the Flightcell DZMx, a major avionics Aircraft real-time tracking + data/voice communications platform. Features worked on:
Flight tracking over cell 4G networks, live remote control VPN based system, cell and satellite networks communication

Flightcell® DZMx

The world's **only** all-in-one solution for global voice, data, messaging and flight tracking

protocol ABI and API, using IP or Satellite based networks /sublayer. Coding, deployment and customer assistance. Based on **ARM/linux** with **C/C++, python, Google Go.**
Change management, best practices implementation:
Initiated major changes and systematic best practices usage: systematic peer code review, Unit testing, functional testing, regression testing, continuous integration, code metrics, git+gitflow.

New skills gathered

Embedded C in depth, UnitTesting (**extensive**), **CI**, pyTest, **Golang**, **Satellite** and **Cellular networking stacks**, ISO9001 and EASA Flight critical standard

Software Applications:

Linux C99/C++17 executables, Golang server side, Python,
CI: Jenkins
Unit test: Pytest, UnitTest++
Technology   stack: C99, C++17, Python3, Golang, AngularJS on Linux ARM & x86
Testing : C++ Unit tests cppUnit, CppUnit, Pytest Embedded   software work Firmware developed controlling Satellite, Cell modems,
Networking : 3G/4G/ Sat +cell dual channel communication using MPTCP and UFTP, Iridium SBD Framework/tools : Boost, QT, cross compilers, x86/ARM, Docker, ansible, ZeroMQ Company : 15 employees, leader in lightweight integrated all in one tracking, data and voice Aircraft Embedded solutions. Typically used by rescue, police, military helicopters worldwide.
Provisioning/ containers/ env / cloud: Docker, Amazon EC2, AWS
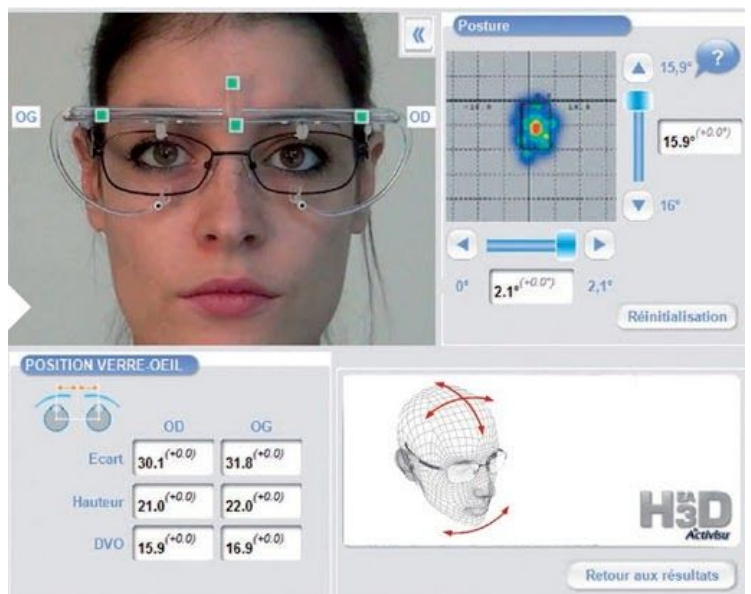
[IVS Activisu Group](), France, 2013-2016

Role:

R&D Software engineer, in charge of prototyping Optical measurement devices, software, along with a Hardware Engineer and Mathematician researcher.
A very multi disciplinary varied mission, where hardware electronics background as much as software and Maths backgrounds have been put to contribution.

Worked mostly as part of the R&D team but in collaboration with production team, and

web development team in order to integrate the prototypes + Release candidates products (Software side) into an existing ecosystem of connected devices, centrally managed for customers, typically a network internet capable box, connected to optical measurement devices, in an optometrist shop. Fleet of shops managed remotely by support desk via a VPN and web front end.

Achievements

Successfully developed optical/electronically assisted measurement connected devices from requirements, prototyping to Production stages. Namely Deeplights by Activisu:
[Deep Lights on the App Store](#)
[POPAI Award 2015 Silmo DeepLights](#)

New Skills gathered

ARM linux, Atmel **MCU** programming, **MIPS** linux and ARM linux custom distribution config and deployment, hardware data recording, hardware+software remote debugging.
Team collaboration, Multi tasking between Software, hardware prototyping, high mathematical component programming. Customer presentation and management of subcontractors relationship working on sub topics management.

Software/technology/Framework/platform
C,C++, Python on MIPS, ARM linux, Windows Win32, .NET 2,3.5, PHP, HTML5.
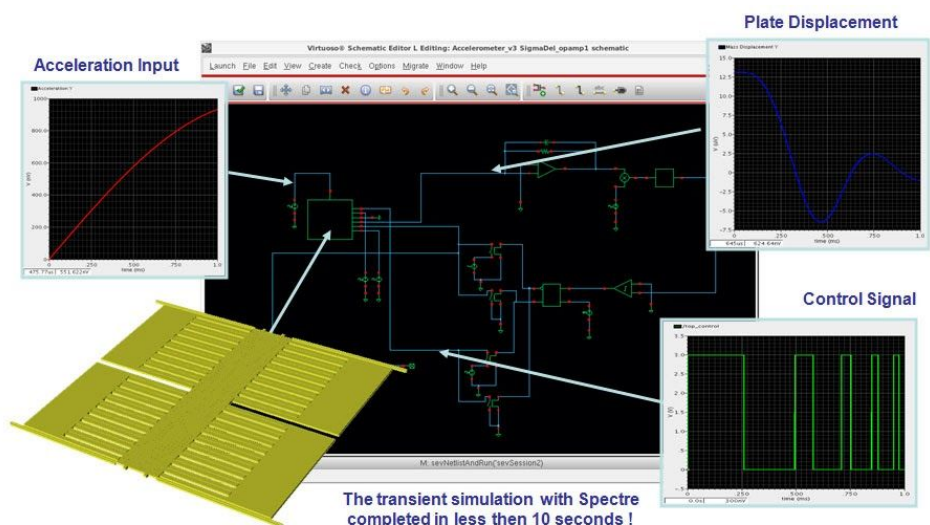CI: Jenkins

Team:

Worked as part of 2 R&D engineers team that developed from paper to full-fledged commercial product, Multiple Awards winning wireless mobile optical measurement machine DeepLight By Activisu.

Cadence Design systems
UK, 2010-2013

Role

C++ Software engineer on Analogic **Micro-processors design** and simulation tools

Acceleration Input

Plate Displacement

Control Signal

The transient simulation with Spectre completed in less then 10 seconds !

Cadence Virtuoso Schematic and Composer. These are used by prestigious chip manufacturers like Intel, nVidia, Samsung, infineon, Renesas, STMicroelectronics and more.

R&D on CAD tools for Microprocessors Design, using C++, Lisp and Qt C++ framework on Unix platform, designing new features and maintaining existing software on Cadence Virtuoso (25 years old Analog Microchip Design tool). Work specifically on GUI and Data layer underlying the GUI and interfacing with the Microprocessor schematics object oriented database (Cadence OpenData see).
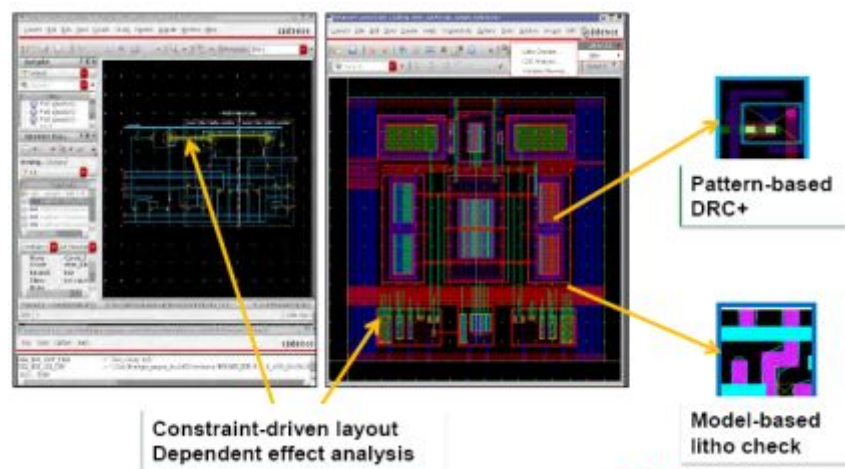
Achievements

Learning C++ while self taught and mentored, to a high standard at a fast pace.
 Successfully delivering new features on Cadence Virtuoso, amongst which an HTML5 schematics view export feature.
Dealing with a very large code base and remote build servers and distributed team work.

New Skills gathered

Learned **OOP** and **C++** to a high standard, after learning at School. Learned to refactor a huge legacy code base (millions of LOC C code from 1989 onwards). **QT C++** framework. **HTML5** and JS. Learned to work in distributed teams environment (worldwide), dealing with large requirements and code base. Debugging and investigation of bugs and feasibility studies, refactoring of very large code base (15 Millions at the time in global code base and about 500.000 for our main team code base).

Constraint-driven layout
Dependent effect analysis

Pattern-based DRC+

Model-based litho check

Cadence Virtuoso:
http://www.cadence.com/products/cic/pages/default.aspx

Omnifone Ltd, UK, 2010

Role :

 .NET, SQL server and Oracle 10g developer
Worked on a multimedia content management and streaming platform, MusicStation, a former Spotify competitor,
Used .NET (2.0 and 3.5)/c#/VB.NET, c++, SQL SERVER and Oracle 10g/11g development.
Multimedia content management : Metadata management, multimedia content processing, Database administration and programming (T-SQL and Transact SQL).

New Skills learned

SQL server 2008, Oracle 10g, Transact SQL, project management skills.

Achievements:

Gathering good experience on Large multimedia database servers.

SimpleSoft, UK 2009-2010

Role:

Software developer and Software trainer

Provided training and support and development on Pageflex Suite. Created and assisted a team in Paragon (Paris France) the creation of document templates by using CAD tools and .NET programming API.

New Skills gathered

 ASP.NET, content management, Providing **Software training in 2 languages**, translating technical content to high standard from English to French. Working autonomously on unknown topics. Time and deadline management.

Achievements

Delivery Software training to senior teams 25 years my senior at the time, delivering translated training material in short time (a few days), while training myself on Multimedia catalogue design platform just before delivering training and pretending to be an expert, while having minimal experience, but finding a way to get answers by using the right people, connections, and knowledge base. Working under a lot of time pressure.

Corim Solutions, FR 2007

Role:

 .Net Software developer
Designed and implemented a .NET 2.0 web application based on C# with ASP.NET, that was part of an ERP software, connected to an existing custom application server.

Used .Net, SQL Server 2005, Javascript, CSS and nHibernate for data abstraction, in a multi tiers client-server architecture.

Achievements

Managing to handle new **design patterns** i.e. client-server RPC, abstract factory, momento, singleton (safe no leaking), writing type generic code for the first time.
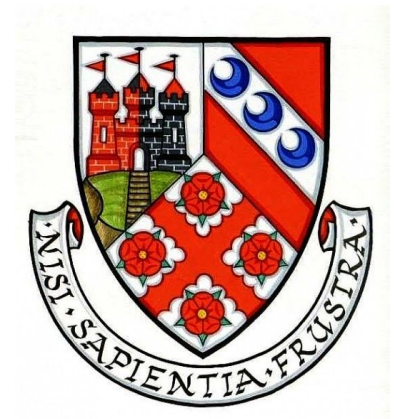
New skills gathered

ASP.NET 2.0, multi layer and tiered application architecture, via Data mapping layers like Hibernate, and abstract classes interface (good design)! Writing requirements.

Edinburgh Napier University, UK, 2008

Role

Teaching assistant in **Java** Object oriented programming, helping students during practicals and also giving one to one Object oriented programming training and catch-up lessons.

Achievements

Sharing knowledge with fun, giving back smile to students that thought they were lost for good in Software concepts understanding, rapidly fixed with a few good metaphor from real life analogy and explaining something differently in as many different ways as it takes instead of repeating the same thing over and over.