Richard Braun

Senior Software Engineer

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http://www.sceen.net/

Companies

- **Novasys Ingénierie**
  Embedded software engineer *2010 – 2016*
- **Proformatique**
  Network software engineer *2007 – 2008*

Education

- **ESGI - Paris**
  Software Engineer *2002 – 2007*

Skills

Specialties: Parallelism (multithreading/multiprocessor/memory models/RCU), distribution, virtual memory, microkernels, system development, algorithmics, performance, virtualization, embedded systems, real time, IPv4/IPv6 networking, POSIX, security, debugging, project maintenance, coding rules and philosophy, self-discipline, communication in general

Computer languages: C, assembly (application and system x86), Python, shell scripts, Makefile, XML, SQL

Operating systems: Linux (Debian, OpenWRT), NetBSD, FreeBSD, Solaris, QNX, Mach, L4

Networking: Ethernet, WiFi, xDSL, IPv4, IPv6, TCP, UDP, routing, filtering, NAT, VPN, DHCP, DNS, HTTP, SMTP, IMAP, POP3, NTP, LDAP, NFS, GTP

Software: Vim, Git, Subversion, Doxygen, LaTeX, GNU toolchains (binutils, GCC, glibc/uClibc), busybox, GDB, OpenOCD, buildroot, GNU autotools, CMake, pkg-config, dpkg, Valgrind, Qemu/KVM, OProfile, U-Boot, OpenSSL, Netfilter, OpenVPN, Quagga, libpcap, Wireshark, Bind, OpenLDAP, Apache, PHP, MySQL, SQLite, Oracle, Postfix, Dovecot, ntpd

Languages: English (written, spoken, TOEIC 950/990), French (native)

Projects

- https://www.sceen.net/the-x15-operating-system/ - 32/64 bits scalable multi-processor microkernel
- https://developers.google.com/open-source/gsoc/ - Google Summer of Code Mentor 2011-2016
- http://www.gnu.org/software/hurd/hurd.html - GNU/Hurd contributor
- http://buildroot.uclibc.org/ - Buildroot contributor
- http://uclibc.org/ - uClibc contributor
- https://www.sceen.net/basic-code-blocks-for-c/ - Personal open source C toolkit
- http://www.sceen.net/ - Personal server (blog, mail, git, virtual machines, tunnels, etc..)

Professional experience

- **ENGIE Ineo (Cofely Ineo)**
  Embedded software engineer *August 2014 – June 2016*
  - Maintenance of the internal Linux distribution
  - Complete rewrite of the real-time Kinetis K60 microcontroller firmware
  - Fixes/rewrites of many drivers - I2C, USB, EEPROM, MDIO, ADC/DAC, odometer, gyroscope, GPS, etc...
  - **Technical environment:** C, Linux, Freescale MQX, GCC, ARM Cortex-M4, OpenOCD, GDB
- **Qosmos**
  R&D software engineer *July 2013 – July 2014*
  - Profiling and porting of the deep packet inspection engine on embedded devices
  - Professional services around a zero-copy packet offloading Linux kernel module
  - Development of generic and performant reusable components for object caching
  - Development of a library for GTPv1 and GTPv2 connection tracking and analysis
  - Analysis and implementation of a specialized hardware regular expression library
  - **Technical environment:** Linux, C, Netfilter, Valgrind, Coverity, Cavium Octeon, Broadcom MIPS/XLP, Freescale PowerPC

Professional experience (next)

- **Cofely Ineo**
  Embedded software engineer *May 2012 – June 2013*
  - Creation and maintenance of the internal Linux distribution
  - Creation of the compilation toolchain, remote and local debugging tools, development virtual machines, documentation and training
  - Various optimizations (image size reduction, upgrade reliability, video acceleration, specialized instruction sets, profiling)
  - **Technical environment:** Linux, buildroot, C++, Qemu, Valgrind, OpenGL, Intel Atom
- **Sagemcom**
  Embedded software engineer *July 2010 – April 2012*
  - Design and implementation of a new TR-069 client for CPE/STB devices
  - OpenWRT development, support and packaging
  - Creation of a set of virtual machines reproducing the STB/CPE/Broadband network chain to ease development
  - Debugging (hardware acceleration, software performance, cache coherency, memory leaks, etc...)
  - **Technical environment:** OpenWRT, Linux, uClibc, C/C++, GNU autotools, Qemu, Valgrind, OProfile, U-Boot, Ikanos, Broadcom, OpenRG, MIPS
- **Thales Communications**
  Software engineer *April 2009 – October 2009*
  - Implementation of network protocol analyzers
  - Implementation of memory allocation and execution monitoring modules
  - Rewrites of modules into multithreaded versions for very high bandwidth data rates
  - Rewrite of the build system with CMake
  - **Technical environment:** C, Linux, GCC, GDB, Valgrind, MySQL, SMTP/POP3/HTTP/Webmails, CMake
- **Proformatique**
  VoIP software engineer *September 2007 – June 2008*
  - Implementation of IPBX modules (C, C++, Python)
  - PBX/SQL (MySQL/SQLite) integration
  - Call processing analysis
  - Implementation of custom PBX functions (call bridges, automatic recall, voice clock, etc...)
  - **Technical environment:** Linux, Asterisk, GCC, Python, SQLite, MySQL, PHP, SIP/H323/IAX/RNIS
- **ESGI**
  Embedded Linux courses *January 2008 – June 2008*
  - Lectures on Unix, Linux, operating systems
  - Embedded development practices (cross compiling, UART console, minimalist environments)
  - **Technical environment:** Linux, uClibc, Busybox, Qemu, AMD Geode evaluation boards