

Richard Guy Briggs - Resume

Richard Guy Briggs
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CAREER SUMMARY AND SPECIALTIES:

- Linux kernel network security programming
- Embedded video hardware device driver programming
- Telecommunications hardware device driver programming
- Protocols: IPv6, IPv4, IPSec (ESP, AH, PFKEYv2, IKE), TCP, UDP, ICMP, HTTP, BRI, PRI, ethernet, 802.3
- Processors: x86, ARM9, PowerPC, MIPS, 680x0 (68302)
- Linux server admin: BIND DNS, SMTP, listserve, POP3, SSL, IMAPS, webmail, DHCP, Apache, SSH, IRC, SMB/CIFS, O/S installation, update, upgrade
- Operating Systems: Linux (Debian, Ubuntu, TinyCore, SnapGear(uClinux, uClibc, U-boot, busybox), Redhat, SuSE, Caldera, Slackware, SLS), OpenBSD. Historical: MS Windows/NT, MS-DOS, UnixWare, Solaris, SCO UNIX, Netware, IRIX, OS/2, MacOS, ULTRIX, AIX, Interactive UNIX, CMS/VM, RT-11/R SX-11/TSX-11
- Languages: ANSI C(gcc, cc), bash, perl, HTML, Python, Javascript. Historical: ARM9 assembler, 80x86 assembler, 68xx0 assembler, Prolog, dBase III+, Fortran IV, Lotus 123, Pascal, Waterloo Structured BASIC.
- Hardware: reading schematics, debugging, probing, modding, digital scope, network analyser, OTDR

EMPLOYMENT DETAILS:

2010 - present: **Contract Software Engineer**
at [Tricolour Consulting](#) (Ottawa)

- Ruggedized Solid State NAS Embedded Linux system development (C, Perl, shell)
- Embedded Linux network filesystem metadata integrity testing.
- Embedded Linux build system porting.
- Linux IPsec cryptographic processing testing.

2009: **Term Software Engineer**
at [Amita Corporation](#) (Ottawa)

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- Linux minimalist distribution customization.
- Linux O/S boot encryption survey.
- Survey state of Linux on embedded development or evaluation platforms.

2007 - 2008: **Senior Software Engineer**

at Axentra Corporation (was OEone) (Ottawa)

- Researched Certificate Authority requirements to implement a Hardware Security Module-based signing authority for Customer Premises Equipment.
- Brought up an RPM development environment on MIPS and ported RedHat ES4 and custom RPM packages from ARM/PPC/x86 to MIPS.
- Enhanced Perl release generation scripts for greater automation.
- Added features and fixed bugs in CPE from kernel up to web UI for Linux on x86, ARM9, PPC
- Execute performance testing on CPE to localize and eliminate bottlenecks

2004 - 2007: **Senior Software Engineer**

at Lumenera Corporation (inc. 2002) (Ottawa)

- Design team member for new digital network surveillance cameras and adding features to existing models
- Code software for digital network surveillance cameras, from kernel modules, imager drivers, API and Javascript GUI
- Develop primarily in C, but also Python, Javascript, Unix shell
- Develop for Linux on ARM9, x86, some exposure to Freescale (PPC) and TMS320C6xxx
- Perform Linux system maintenance on common facilities
- Acted as a mentor to junior and new team members

2003 - 2004: **Software Engineer**

at startup Axigon Healthcare Technologies, (Inc. 2003, now defunct) (Ottawa)

- Assessed and instrumented Speex patent-free speech codec as to suitability for porting to a potential product platform
- Contributed to design of network protocol and started development of network code for a future product
- Worked with 3 different platforms including Linux-x86 userspace, Ubicom IP2022 SDKv5.4 and Microchip PIC 18 family

1997 - 2003: **Software Engineering Contractor**

FreeS/WAN Project (Internet)

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- Maintained and augmented KLIPS, the kernel portion of this IPsec implementation for Linux.
- Matured the FreeS/WAN kernel code to clear SADB and SPDB, unload module, statically link.
- Implemented the PF_KEY_v2 socket family for the Linux kernel for use in FreeS/WAN.
- Added a library to implement PF_KEY_v2 message building and parsing, shared by userspace and kernel space.
- Reviewed and Integrated patches and features from open source contributors.
- Maintained manual keying userspace utilities.
- Participated in IPsec protocol development activities by attending IETF (Internet Engineering Task Force) meetings.
- Tested packaging and interoperation.
- Participated in IPsec interoperation workshops (bakeoffs) between IPsec vendors.
- Made professional conference presentations in Ottawa (Ottawa Linux Symposium (OLS) - multiple years, SANS 2000), Sweden (NordU 2000), Paris (IPsec), Germany (Linux Kongress 2000), Australia (Sydney Linux Expo 2000).

1997: **Software Engineering Contractor**

Vitana Corporation (Gloucester) (now trading as Pixelink)

- Device driver porting from SolarisPC 2.5 to SCO OSR 5.0 UNIX for a family of multi-line (T1, E1, ISDN) telecommunications SCSA/MVIP cards.

1995 - 1996: **Software Engineer**

Vitana Corporation (Gloucester) (now trading as Pixelink)

- Maintained and developed device drivers for Mitel ISA bus telephony cards (dual T1, dual E1, 8-line ISDN), some with embedded 68302 processors, under SCO UNIX, UnixWare, OS/2 and Solaris,
- Hardware and software documentation for ShapeGrabber, a 3-D laser imaging PCI processor with accompanying API,
- Hardware documentation and software development for PCI to Motorola Qbus bridge chip evaluation board.
- In-house NetWare, Solaris, MKS SI Configuration Management, UNIX and TCP/IP network support.

EDUCATION:

2010 - (ongoing): **M. A. Sc., Electrical and Computer Engineering, (part-time)**

University of Ottawa

- Interest: Signal Processing
- Completed:
 - ◆ Adaptive Signal Processing
 - ◆ Image Processing and Communications

B. A. Sc., Computer Engineering , Cum Laude (Honours)

University of Ottawa

- Final year project: Artificial Neural Network Speech Recognition
- Student project involvement: RALOS II Solar Car Team Electrical Systems Co-ordinator

OTHER EXPERIENCE:

Community Web/Mail Host (since 1998): Green Party, HPVOoO, CfSC, ConsCoop, OCLUG

Founding member of several organizations: HPVOoO, CCFood, ConsCoop, OCLUG

Designer/builder: ¾ ton bicycle cargo trailer

Experimental Solar Car Rayces: Various positions over 9 events in Canada/USA/Australia (1992-2008):

- Participating Team -- Electrical Systems Coordinator/Strategy Team Member
- Event Staff:
 - ◆ Technical Assistant
 - ◆ Observer
 - ◆ Technical Observer
 - ◆ Chief Electrical Scrutineer
 - ◆ Jury Member
 - ◆ Observer Manager
 - ◆ Photographer

Green Party: Email list host and moderator/Riding President/Electoral Candidate September 1997 - May 2003: **Founder/Chief Architect/Chief Administrator/Chief Trainer**

Conservation Co-operative Homes (ConsCoop) Network Committee (Ottawa) January - April 1997: Home for Destitute Children (Orphanage) **Volunteer - Tutor/Teacher**

Child Haven International - Canada/Nepal (Kathmandu) August 1996 - 2004: **Co-founder/Collator/Credits**
C C Food Club (Conservation Co-operatives Homes) February 1996 - January 1997: **Maintenance Committee Chair**

Conservation Co-operatives Homes (Ottawa) March - April 1994: **Jackeroo**

Nookawarra Station (Western Australia) January 1994: **Volunteer Neural Network Researcher**

Department of Electrical Engineering, University of Queensland (Australia) 1991 - 1993/1997 - 2000:

Technical Producer for weekly public affairs show, volunteer

CHUO FM 89.1, University of Ottawa / CKCU FM 93.1, Carleton University

MEMBERSHIPS:

Ottawa Canada Linux Users Group (OCLUG), (since 1998), founding board member
OCRI UNIX (OCUNIX), 8 years
IEEE, 5 years

INTERESTS:

Music, Recording, Photography, Long Distance Bicycle Touring, Recumbent Bicycles, Canoeing

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