

Richard Guy Briggs - Resumé

Richard Guy Briggs
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CAREER SUMMARY AND SPECIALTIES:

- 22 years of programming experience
- 17 years of experience in C in UN*X environments
- Good attention to detail
- Methodical, excellent analytical and organizational skills
- Ability to work independently or in a team
- Team Lead experience, ability to mentor and teach
- Drive to follow projects through to completion

- Linux kernel network programming
- Embedded video hardware device driver programming
- Telecommunications hardware device driver programming
- Knowledge of protocols: BRI, PRI, ethernet, 802.3, IPv4, TCP, UDP, ICMP, ESP, AH, PFKEYv2, HTTP, SMTP, SSL
- Processors: 68302, ARM9, x86, PowerPC, MIPS
- Linux server admin of DNS, mail, listserves, DHCP, Apache, IRC, O/S installation, update, upgrade.

EMPLOYMENT DETAILS:

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

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

December 2007 - October 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.

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- 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

April 2004 - September 2007: **Senior Software Engineer**
at Lumenera Corporation (inc. 2002) (Ottawa)

- Design team member for new network cameras and adding features to existing models
- Code software for digital 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, Freescale (PPC) and TMS320C6xxx
- Perform Linux system maintenance on common facilities
- Acted as a mentor to junior and new team members

October 2003 - January 2004: **Software Engineer**
at startup Axigon Healthcare Technologies, (Inc. 2003) (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, Uicom IP2022 SDKv5.4 and Microchip PIC 18 family

November 1997 - June 2003: **Software Engineering Contractor**
FreeS/WAN Project (Internet)

- 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 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).

July - August 1997: **Software Engineering Contractor**

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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.

January - June 1997: (**International Volunteer Work**)

January 1995 - December 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.

October 1994 - January 1995: **Software Engineer**

JIT Learning Products Inc. (Ottawa) (re-invented as Impatica)

- Development of an interactive multimedia tutorial, "Using CorelDRAW 3",
- Test and review of alpha and beta versions of "Using CorelDRAW" 5 and 3,
- Customer technical support; in-house OS and network support.

September 1993 - September 1994: (**Sabbatical in Australia and China**)

Summer 1993: **Product Development Engineer**

AMP of Canada Ltd. (Nepean) (now Tyco Electronics)

- Development of fibre optic cables, connectors and tools:
 - - designing, prototyping, testing.
- Research and proposal writing for military fibre optic contracts:
 - - interpreting specifications, sourcing, designing (CAD),

June 1992 - April 1993: **Software Engineer** (student)

Excalibur Systems Limited (Kanata) (now owned by DRS Technologies)

- Programmed in C under Interactive UNIX, satellite radar simulator:
 - - Interpreted and debugged software specifications, data dictionaries, pseudo code;
- Maintained development tools for electronic warfare threat simulator (radar):

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- - Adapted, designed, programmed, tested.

May 1990 - Dec 1991: **Product Verification**

Corel Systems Corporation (Ottawa)

- Tested, evaluated, recommended and wrote reports on new software and hardware
- - word processing, Desk Top Publishing, graphics, DSR, OCR
- - Local Area Networks, UNIX connectivity.

Sept 1988 - March 1990: **Technical & Systems Support** (part time)

Mas-Term Innovations Limited (Kanata)

- Designed, developed and programmed an inventory control system,
- Maintained all computer systems, and installed hardware and software.

April 1987 - August 1988: **Quality Control Manager** (full time)

Mas-Term Innovations Limited (Kanata)

- Trained employees in many areas including:
 - - quality control testing and management,
 - - fibre optics and copper cable assembly,
- Set-up, programmed, used, maintained, verified and modified automated production and testing equipment,
- Interviewed applicants and hired new assemblers,
- Prototyped fibre optic and copper cable assemblies, wire wrap backplanes, cable harnesses.

EDUCATION:

1988 - 1993: **B. A. Sc., Computer Engineering , Cum Laude (Honours)**

University of Ottawa

- Final year project: Speech recognition employing artificial neural networks.
- Extracurricular: University of Ottawa Solar Car Project Electrical Systems Co-ordinator, see RALOS

1981 - 1986: **Grade 13 Diploma (SSHGD), Bilingual Program,**

Fisher Park High School (Ottawa)

RELATED SKILLS:

Operating Systems: Linux (Debian, Ubuntu, Redhat, SuSE, Caldera, Slackware, SLS). Historical: OpenBSD, MS Windows/NT, MS-DOS, UnixWare, Solaris, SCO UNIX, Netware, IRIX, OS/2, MacOS, ULTRIX, AIX, Interactive UNIX, CMS/VM, RT-11/RSX-11/TSX-11

Languages: ANSI C(gcc, cc), bash, perl, HTML, Python, Javascript. Historical: ARM9 assembler, 80x86 assembler, MS Visual C, 683x0, MSAccess SQL, 680x0, Prolog, dBase III+, Fortran IV, Lotus 123, Turbo C, Turbo Pascal, MSBASIC, Waterloo Structured BASIC.

Other: Interpretation of schematic diagrams and technical drawings; Use of oscilloscope, network analyzer, and Optical Time Domain Reflectometer; Competent in dealing with computer viruses and recovering data errors.

OTHER EXPERIENCE:

January 2002 - Present: **Co-founder/IT admin**
Human Powered Vehicle Operators of Ottawa club

- Set up and maintain an email list and web pages.
- Organise and represent the club at public events promoting Human Powered Vehicles.
- Designed and built a tandem-axle 4-wheel bicycle trailer capable of hauling 3/4 ton

July 2008: **Experimental Solar Vehicle Competition Staff Photographer (Canadian leg)**
American Solar Challenge 2008, Dallas, TX, USA to Calgary, Alberta, Canada

- Photographically documented the event from Winnipeg to Calgary.

October 2007: **Experimental Solar Vehicle Competition Staff Photographer**
World Solar Challenge 2007, Darwin to Adelaide, Australia

- Photographically documented.

July 2005: **Experimental Solar Vehicle Competition Staff Photographer (Canadian leg)**
American Solar Challenge 2005, Austin, TX, USA to Calgary, Alberta, Canada

- Photographically documented the event from Winnipeg to Calgary.

July 2001: **Experimental Solar Vehicle Competition Staff Photographer**
American Solar Challenge 2001, Chicago to Los Angeles

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- Photographically documented scrutineering, final qualifying and event itself. Photos were subsequently used for the 2003 Official Rayce Programme.

November 1999-Present: **Host and moderator of email lists**

All email lists for the Green Party of Canada

- Install and configure Majordomo list software.
- Administer and moderate 18 email lists.

June 1999: **Experimental Solar Vehicle Competition Staff Photographer**

Sunrayce '99, Washington, DC to Epcot, FL

- Photographically documented scrutineering, final qualifying and event itself. Photos were subsequently used for the 2001 and 2003 Official Rayce Programmes.

May 1999 - October 2003: **Ontario Provincial Electoral Constituency Association President**

Green Party of Ontario, Ottawa -- Vanier riding

- Organised public meetings
- Completed audit and tax paperwork.

May - June 1999: **Ontario Provincial Electoral Candidate**

Green Party of Ontario, Ottawa -- Vanier riding

- Spoke at All Candidates Meetings and canvassed public
- Collected funds to pay \$200 deposit
- Co-ordinated sign campaign
- Completed audit and tax paperwork.

September 1997 - May 2003: **Founder/Chief Architect/Chief Administrator**

Conservation Co-operative Homes Network Committee (Ottawa)

- Designed and built a 3-closet, 60-node ethernet network in an 84-unit, 4-storey residential apartment building.
- Pulled and trained people to pull Cat-5 100-base-T wire through conduit to each apartment.
- Set up a dual-homed ADSL Linux firewall with a routable /24 and an extruded routable /26.
- Set up a Linux server to serve smtp, ssh, dns, http, pop3, imap, dhcp, smb.
- Connected and configured clients on a variety of platforms.
- Administered user accounts.
- Executed remote backups.

June 1997: **Experimental Solar Vehicle Competition Observer**
Sunrayce '97, Indianapolis to Colorado Springs

- Observed and recorded actions of solar competition teams and report to officials

May - June 1997: **Federal Electoral Candidate**
Green Party of Canada, Ottawa -- Vanier riding

- Spoke at All Candidates Meetings and canvassed public
- Collected funds to pay \$1000 deposit and purchase election materials
- Co-ordinated sign campaign
- Completed audit and tax paperwork.

January - April 1997: **Volunteer Work Term in a Home for Destitute Children**
Child Haven International - Canada/Nepal (Kathmandu)

- Tutoring math, english, science to Grade 1 to 4; leading children on excursions
- Helping paid staff with duties and performing electrical repairs in the home
- Assessing curriculum for and teaching Computer Studies: Grade 7 to 9
- Providing guidance and experience to Science Clubs: Grade 6 to 9

August 1996 - 2004: **Co-founder/Collator/Credits**
C C Food Club (Conservation Co-operatives Homes)

- Collate members' orders and submit total order to supplier monthly
- Work with the treasurer to update finances

February 1996 - January 1997: **Maintenance Committee Chair**
Conservation Co-operatives Homes (Ottawa)

- Provide an agenda and leadership in committee meetings
- Interact with co-op memvers and externals concerning maintenance issues

June 1996: **Chief Electrical Scrutineer/Jury/Observer Manager**
Solar Energy Society of Canada, Inc: Canadian Solar Discovery Challenge

- Reviewed all competitors for compliance with solar vehicle challenge electrical regulations.
- Addressed protests, made rulings on regulations and assessed penalties.
- Organized and briefed independent observers who accompany each vehicle on a rotation basis.

May 1995 - 2003: **Telephone Contact/Membership Secretary**

Auto-Free Ottawa

- Direct telephone enquiries to appropriate people and manage membership list
- Attend public meetings and demonstrations to educate the public about issues concerning automobile use, societal dependence and addiction

March - April 1994: **Jackaroo** (paid for trip to China)

Nookawarra Station (Western Australia)

- Aerial mustering of sheep by motorcycle and yard duties during shearing.

January 1994: **Volunteer Neural Network Researcher**

Department of Electrical Engineering, University of Queensland (Australia)

- Explored node splitting feasibility and techniques, and explored simulation software.

October - November 1993: **Technical Assistant/Technical Observer**

Energy Promotions: World Solar Challenge-- world's fastest solar car race (Australia)

- Designed and implemented a relational database of solar car specifications - Ensuring competitors keep within competition technical regulations.
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1992 - 1993: **Electrical Systems Coordinator**

Team Ralos-2: University of Ottawa Solar Race Car

- Designed overall system and directed smaller design groups,
- Sourced components and built modules,
- Performed most lab electrical tests and most road vehicle handling testing,
- Member of 3 person strategy team for Sunrayce '93 entry, raying from Dallas to Minneapolis.

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

1983 - 1995: **Operator, sound system for weddings, memorials**

First Unitarian Congregation (Ottawa)

1984 - 1986: **Head of Technical Stage Crew**
Fisher Park High School (Ottawa)

MEMBERSHIPS:

Citizens for Safe Cycling, (since 1995), current list host
Human Powered Vehicle Operators of Ottawa, (since 2001), founding member
Ottawa Canada Linux Users Group, (since 1998), founding board member
Green Party of Canada, (since 1995) / Green Party of Ontario, (since 1995)
CAMMAC (amateur music association), (since 1970)
Auto-Free Ottawa, 8 years
OCRI UNIX (OCUNIX), 8 years
IEEE, 5 years
BRMNA (british railway modellers), 7 years

INTERESTS:

Music:

- Grade VIII Recorder, Grade II Theory; Bassoon, 5 years; Trumpet, 2 years; Digeridoo

Outdoors:

- Bicycle touring
 - ◆ Australia - 5000 km, summer '93/94
 - ◆ Victoria to Montreal - 6000 km, summer '91 - raised ~ \$7300 for USC Canada
 - ◆ Cuba - 1000 km, September 1998, honeymoon
 - ◆ UK - 400 km, tandem trike, April 2002
 - ◆ Ottawa area - 280 km, Thanksgiving, yearly
- Skiing (downhill and cross country winter camping)
- Canoe tripping (camp, 6 years)

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