

Tyler MacDonald
PO BOX 8450
Victoria, B.C.
V8W 3S1
tyler@macdonald.name

Expertise:

- Developing Server Software (*C, C++, Perl, MySQL/Postgres, APR, Berkeley DB*); 16 years' experience
 - Web Programming (*Perl, PHP, MySQL, AJAX, CSS, XML, JavaScript, C#/.NET, Ruby On Rails*); 9 years' experience
 - Network Design & Security (*Switching, routing, Cisco IOS, intrusion detection systems, firewalls, IP tunnelling, anti-virus, security policy development, email filtering*); 11 years' experience
 - System Administration (*Servers, maintenance, scripting/automation, backups, client support & training, anti-spam, server load monitoring/early warning systems*); 11 years' experience
 - Debian GNU/Linux (*Deployment as a Server or Workstation, package building, streamlining*); 8 years' experience
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Current Projects:

FillZ, Inc. (Victoria, BC); an AbeBooks company August 2007 – February 2010

Senior Technologist

<http://www.fillz.com/>

Technologies: Linux (Debian, Redhat), Apache, MySQL, Perl, Xen, Java, C, Zimbra, OTRS, Subversion, Nagios

- FillZ was acquired by AbeBooks from a proprietor, Miron Cuperman. From a technical standpoint it was basically a one man show. I underwent a full knowledge transfer from Miron and bootstrapped a development organization, implementing defect tracking in JIRA, test and release branches in subversion, and the process that surrounds it. From 2007 to mid-2009 my job was a development / sysadmin hybrid; in 2010 we have 2 dedicated administrators and while I still do systems programming, I am more focused on the development side and the FillZ product itself.
- From August 2007 to August 2009, was part of a weekly on-call rotation, starting with just me, ending with 3 people on a weekly cycle. I have “retired” from pager duty at FillZ but am not adverse to taking it on again in the future.
- Grew the technical team from 2 people in 2007 to 6 in 2010 to keep up with growth and business demands. (2 dedicated sysadmins, 3 dedicated developers, and me, the glue). We grew our customer base by 300%, and with some excellent help from the business side we have increased our monthly GMV by almost 400%. We have adopted a mostly “Agile” development structure, focusing on teamwork and collaboration while trying to maintain a good level of self-direction. Employees are encouraged to spend some of their core hours at the office researching and experimenting.
- Developed and maintained the FillZ.com website and backend processes

responsible for managing and synchronizing customers' inventory and orders across multiple sales channels.

- Established automation in FillZ infrastructure; virtual and physical servers are defined in a YAML file which is checked into subversion and then used to generate DNS, Nagios alert, munin graphing, and server-to-server communication information. The same file also defines server "roles"; when a server starts up, it references the file to see what services it should start up / shut down and the appropriate adjustments are made to the symbolic links in /etc/rc?.d.
- Consolidated infrastructure for ease of management. We used to be spread out across 4 ISP's, now we are with one ISP on standardized hardware in 3 data centers.
- Transitioned virtual server deployment from a CentOS 4 "reference" xen image to a formal build process involving debian and "debootstrap" to create viable FillZ server images from scratch. As part of the process, enabled automated builds triggered by subversion checkins, which also run all unit tests and post the results to our Smolder server. As part of this we also now have our own debian repo, and build our own perl modules as debian packages to make it easier for our operations team to deploy updates.
- Currently experimenting with transitioning some of our servers to our parent company's service, Amazon Elastic Cloud (EC2).

ACD Systems (Victoria, BC)

October 2006 – July 2007

Senior System Administrator

<http://www.acdsee.com/>

Technologies: *Windows Network (Exchange, ActiveDirectory, DNS, IIS, etc), Cisco Network (PIX, IOS, CiscoWorks), Linux Network (Debian, Redhat, Apache, Cacti, SNMPD, etc), PBX (Amaya)*

Database Administrator

Technologies: *Microsoft SQL Server (2000 & 2005)*

E-Business Developer

Technologies: *Visual Studio.NET (C#), T-SQL, XML, SOAP*

Web Operations Developer, Lifecast

<http://www.lifecast.com/>

Technologies: *Linux, Ruby on Rails, MySQL, AJAX, SOAP, Image Manipulation, IIS, Visual Studio.NET(C#/C++), Adobe Flash*

- Established SNMP monitoring and reporting across all servers/routers
- Maintained a diverse network of servers and workstations
- Developed administration tools to automate network maintenance
- Lead developer for Lifecast™, a collaborative storytelling website.
- Maintain and extend 60+ gigabyte replicated Microsoft SQL Server databases
- Develop Intranet applications and Business-to-Business middleware for Systems, Marketing, and Development teams.
- Stayed sane while company reduced headcount by over 50%, moved to a smaller office, and tossed me from position to position.

yi.org Dynamic DNS

<http://www.yi.org/>

Independent Programmer & Sysadmin

November 1998 – Present (Spare Time)

Production (Coded in 2002): *Linux, MySQL, Perl/mod_perl, HTML, HTTP,*

**CSS, XML, C, Apache2, DNS, TCP/IP, PayPal, postfix,
SpamAssassin, proftpd, CVS, Perforce
Development (In Progress): Linux, PostgreSQL, Apache2, C, Ruby on Rails,
BIND 9.4 DNS, TCP/IP, PayPal, Subversion, AJAX**

- High-performance Dynamic DNS update system implemented as a C-based Apache2 protocol handler module
- In the top of it's class for features, speed and reliability
- mod_perl-based web interface for manual updates to DNS information
- Custom extensions to MyDNS DNS server for statistics logging
- Provides Dynamic DNS to over 40,000 free hostnames and 400+ registered domains
- Provides webspace, email, and CVS to friends, family, and small businesses
- CPAN & Debian mirror site

Open Source

<http://www.crackerjack.net/>
<http://search.cpan.org/~CRAKRJACK/>

Independent Programmer

December 2003 – Present (Spare Time)

Technologies: C, Berkeley DB, PHP, Perl/XS, Apache2, HTML, HTTP, CSS, etc

- C-based Apache2 module implementing BitTorrent swarming download protocol with Perl and PHP language bindings for extensibility
- Several perl modules on CPAN covering areas such as databases, user interface, object structures, and the apache web server
- Fledgling participant in mod_perl (<http://perl.apache.org/>) development

Sophos (Vancouver, BC & Abington, UK) September 2004 – August 2006
Weekly Release Manager / UI Tech Lead <http://www.sophos.com/>
Technologies: Perl/XS, C, Apache2, XML, HTTP, CSS, PostgreSQL, Perforce, AJAX

- Architected and developed next-generation web interface to administer the Sophos Email Security Appliance (ES4000):
<http://www.sophos.com/products/es/gateway/es4000/>
- Designed PostgreSQL database for the Email Security Appliance to process and report on 1,000,000 message/day mailflow; 120+ tables, some in excess of 1,000,000 rows. Developed aggregation scripts, views and triggers to speed up delivery and preformat data in SQL to feed directly to reporting and search.
- Development on PureMessage(tm), Anti-Spam/Anti-Virus software used by Amazon, Cisco, ING Bank, Bell, UBC, Bank of England, and many others
- Led team of 4 developers / 2 QA responsible for the creation, testing, and release of weekly updates for the Email Security Appliances.
- Interviewed potential hires

Best Buy Canada

<http://www.bestbuy.ca/>

Contract Programmer

August/September 2004 (Full Time)

**Technologies: Perl, PHP, IIS, Apache, MySQL, MSSQL, Oracle, Win32 OLE,
Active Directory, JavaScript, Cisco IOS**

- Designed and developed “Best Backend”, a web-based tool to manage Best Buy's day-to-day system administration tasks across over 30 servers in a diverse environment (web servers running IIS and Apache, databases running MySQL, MSSQL, and Oracle, routers in both Cisco and Barracuda flavours).

Component Verification (Victoria, BC; Company in Calgary, AB)

<http://www.hemisphere-ng.com/>

Contract Programming Team Member

April 2004 – August 2004 (Part Time)

Technologies: MySQL/InnoDB, PHP, Perl, HTML, PDF, CSS, JavaScript

- PHP-based Web Application enabling engineers to design, customize, and fill out complex forms used in their trade
- Perl-based system for filling out above forms on laptops with no Internet access for later uploading
- Complete security and database design audit of the entire project

ADMA (Victoria, BC; Company in Atlanta, GA)

<http://www.navasmultimedia.com/adma.php>

Contract Programmer

February – March 2004 (Part Time)

Technologies: MySQL, PHP, HTML, CSS, JavaScript

- Online accounting data management environment for accounting firms and their clients

Monkey Tree Pub (Victoria, BC)

<http://www.monkeytreepub.com/>

Contract Programmer

February 2004 – June 2004 (Part Time)

Technologies: MySQL, PHP, HTML, CSS

- Web administration interface to update the pub's menus, maintain photo galleries and web logs

Medical Services Provider (Victoria, BC)

(Non-Disclosure)

Contract Programmer

June – November 2003 (Part Time)

Management Assistant

July 2002 – January 2004 (Part Time)

Technologies: MySQL, Perl/mod_perl, HTML, CSS, JavaScript, GD

- Wrote a Membership Management System to log and graph pertinent data relating to confidential membership information
- Provided customer support and staff training
- Assisted in the design and implementation of office procedures
- Maintained and updated meeting minutes and staff work logs

WeDoHosting.com, Inc (Victoria, BC)

<http://www.wedohosting.com/>

Manager of Information Systems

November 2000 – July 2002 (Full Time)

Global Connection Services

<http://www.globalcsi.com/>

System Administrator/Programmer

March 1999 – July 2002 (Full Time)

Technologies: Linux, MySQL, Perl, C, bash, HTML, CSS, Qmail, DNS, proftpd,

Apache, Webalizer, BillMAX, JavaScript, proftpd, Cisco IOS, CVS, BlackDiamond OS, FastCGI, HTTP, ipchains, AMANDA, iBill

- Connected Apache webservers, FTP servers, UNIX accounts, backup schedules, domain registration, web stats, and BlackDiamond router bandwidth stats to the BillMAX accounting system
- MySQL-based logging of customer statistics
- Developed web interface for customers to view their statistics and change personal details
- Designed, implemented, and maintained a medium-scale Internet Service Provider
- Built, maintained, and monitored a collection of Linux-based webservers
- Implemented backup systems for servers and office workstations
- Provided technical assistance to executive staff
- Developed a Perl-based advertising and revenue management/tracking system ("ShareWeb")
- Developed an intrusion detection and management system for content-based commercial websites, handling automatic firewalling of abusive users (password sharing, brute-force hacking, etc) and an alert system for excessive abuse and/or Denial of Service attacks ("SysAngel")

Paradon Computer Systems (Victoria, BC) <http://www.paradon.com/>

Programming Team Member

November 1998 – March 1999 (Full Time)

Network Administrator

Technologies: Linux, Windows NT, IIS, sendmail, DNS, Panasonic Voicemail, MSSQL, ASP, Visual Basic, Perl, HTML, CSS, JavaScript

- Connected the Paradon Computers website with point-of-sale system
- Worked on replacing existing point-of-sale system with a more modern web-based system
- Built and maintained Linux-based email/DNS server
- Maintained existing Windows NT IIS/MS Exchange server
- Implemented backup systems
- Managed IP network and voicemail systems, including some programming and rewiring
- Provided technical assistance to executive and sales staff

Axion Internet (Vancouver, BC)

<http://www.axion.net/>

UNIX System Administrator

August 1997 - March 1998 (Full Time)

Technologies: Solaris, Linux, Apache, sendmail, MySQL, AMANDA, Cisco IOS, OSPF, INN, NNTPcache, Perl, C, HTML, RADIUS, sendmail, Visual C++

- Connected accounting/sales systems to RADIUS authentication, UNIX accounts, SMTP/POP, virtual domains, etc
- Provided a trouble ticket system and knowledge base for tech support
- Developed monitoring and graphing of user activity, including attempted duplicate logins
- Maintained Sun Microsystems and Linux network servers
- Planned and implemented the assimilation of two other ISPs (UltraNet and Internet XL)
- Trained technical support staff
- Provided technical assistance to executive and sales staff of Axion and its parent company, the Varshney-Chowdry Group
- Performed on-site installations of Linux-based firewalls and web cache/proxies for business customers
- Coordinated with Cisco System Administrator on routing and connectivity issues

Paradon Computer Systems (Victoria, BC)

<http://www.paradon.com/>

Programmer

1996 (Full Time)

Technologies: SCO UNIX, Visual C++, ANSI C, 80386 Assembly, Ascend Routers

- Developed experimental Voice-over-IP desktop and server software
- Designed and developed automated hardware troubleshooting systems

USCyber (Victoria, BC; Company in Wisconsin, MD)

Programmer

1993-1995 (Part Time)

Technologies: SunOS UNIX, Perl, C

- Developed menu presentation and account management software for nationwide dialup ISP

Aladdin Group (Victoria, BC)

Programmer / System Administrator

1994-1995 (Part Time)

Technologies: Linux, Perl, NCSA HTTPD, C, FoxPro

- Implemented and maintained linux-based connection between pay Bulletin Board System (BBS) and the Internet

Education:

- Sun Solaris 2.x Certified Network Administrator (Learnix Vancouver, 1998)
- Extreme Programming Training (Cutter Consortium Massachusetts, 2005)

References:

- **Shaun Jamieson:** President, FillZ.com (Supervisor)
shaun@fillz.com, (250) 744-0903
- **Ryan Bushby:** Developer, FillZ.com (Coworker)
ryan@fillz.com, (250) 744-4924
- **Greg Froh:** Manager of Information Systems, ACD Systems (Supervisor, Sr. System Administrator, DBA + eBusiness Developer)
greg@froh.ca, (250) 507-4909
- **Cam Carmichael:** Operations Manager, Lifecast (Supervisor, lifecast.com)
ccarmichael@acdsee.com, (250) 514-7505
- **Neil Watkiss:** Development Manager, Sophos (Supervisor, Email Security Appliance)
NeilWatkiss@sophos.com, (778) 996-5477
- **Chris Herbert:** Cisco Systems Administrator, Axion Internet (Coworker)
cshnetworks@gmail.com, (604) 306-5309
- **Hans Yodzis:** Manager of Network Operations Center, Terago Networks (Contractor)
hans.yodzis@terago.ca, (403) 668-5308
- **Hans Navas:** President, Navas Multimedia (Supervisor, ADMA + Component Verification Forms)
hansnavas@gmail.com, (250) 704-8186
- **Derek Rathwell:** Former President, WeDoHosting.com (Supervisor, WeDoHosting + GlobalCSI)
derek@wedohosting.com, (250) 888-1525