

## Richard S. Conto

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Hello,

I have had a long career in Information Technology that I have thoroughly enjoyed, a career focusing primarily on taking the brightest ideas to come out of Higher Education and Research and turning them into reliable products and services, demonstrating an opportunity for later commercialization.

I have worked to develop new products and services – and to refine those products and services to make them more reliable and less expensive to operate. I have worked across a broad range of computer and networking platforms – from obscure mainframe systems (such as MTS) to early microcomputers. From software heavy mainframe services in a (programmer) safe development environment to imbedded network operating systems (Merit's MINOS, as well as the HIM/NIM protocol converter.) I worked alone to develop useful processes (a Cisco router configuration manager that collected router configurations for 300+ routers operated by Merit Network Inc) and worked as a member of a team to develop (and operate) the combined Merit Shared Dialin service which had components of Authentication, Authorization, Accounting, and resource management.

I have worked in public facing roles from time to time – from helping to establish the early IT “Help Desk” for academic computing at the University of Michigan, to my present position as part of [webmaster@umich.edu](mailto:webmaster@umich.edu)

I am looking for a position that would encourage and take advantage of my ability to work in the fine details of specialized components and in the broad expanse of large systems.

I do have family responsibilities in the Ann Arbor MI area and my strong commitment to those values – and an unfortunate economic Great Recession – contributed to my long period of unemployment from July 2007 to May of 2009. However, that period has also sharpened in me a certain desire to push the boundaries of what is possible by shaving away a certain complacency I had developed working for 22 years at Merit Network Inc.

I am seeking a position in the Ann Arbor area – within a half-hour commute of Ann Arbor itself. I think that while my skill set is strong, my employment demands are modest – 24 years working in non-profits and educational institutions have encouraged a certain modesty of needs where others may have overextended themselves.

As I think I have demonstrated – I write a rather garrulous cover letter. Thank you for your patience in reading it.

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### SUMMARY:

- Part of University of Michigan Web Hosting Service ([webmaster@umich.edu](mailto:webmaster@umich.edu), <http://www.umich.edu/~umweb> ), provisioning 1300 websites and several hundred Drupal and Mediawiki installations for the University of Michigan
- Assistant Database administrator for Oracle and MySQL databases used by the Umich Web Hosting service.
- System Administrator over 160 servers providing Web Hosting and Database Hosting services for the Umich Web Hosting service.
- Over **19 years** of experience with **network client/server and peer-to-peer** systems on **UNIX, developing, testing, and implementing** daemons, servers in **C** and **Perl**.
- 18 Years experience developing and deploying end-user applications.
- Good analytical, communication, problem-solving, presentation and organization skills.
- Excellent experience putting a product into a 24/7 production service.
- Familiar with the entire software development life cycle and quality procedures followed throughout it.
- Software Development Life Cycle involving requirement analysis, design, development, deployment, testing, documentation, implementation and maintenance for Web-based, Distributed and Client-Server architectures, Perl/CGI, Javascript, PHP.
- Worked **alone** and in **small teams** (3 to 5 developers) on **large projects**
- Major contributor to Merit AAA/RADIUS software (authentication, authorization, accounting).
- Worked on multiple different projects, many simultaneously to solve problems and satisfy requirements as needed.
- Minor kernel work (FreeBSD) to solve local problems with NFSv3 locking (with OS/X clients)
- Minor kernel work in HIM/NIM (UBCnet based IBM 3270 protocol converter adapted for Merit/Minos and PCtie)

### Technical skills:

<b>Programming, Scripting, and presentation Languages:</b>	<b>C, C++, Objective C, Perl (object oriented techniques, networking, CGI, DBI), HTML, Unix/Linux Shell Scripting (Bourne, C-Shell, Bash, tcsh), Javascript, m4, awk, Pascal, IBM ASMH/370, FORTRAN</b>
<b>Databases:</b>	<b>Oracle SQL queries and updates, PL/SQL &amp; scripting, Perl/DBI, MySQL SQL, Postgres SQL, Informix</b>
<b>Technologies:</b>	<b>BSD sockets, Object oriented techniques (Perl, C++), Verisign credit card payment Web system, Cisco IOS, autoconf/configure, autoconf, GNU CC, Xcode/GNUStep</b>
<b>Operating Systems:</b>	<b>UMCE Linux (based on LFS), LFS (Linux From Scratch), Solaris, FreeBSD, SUSE Linux, Ubuntu Linux, Fedora Linux, Red Hat Linux, DEC Ultrix, Mac OS/X, MTS, Windows/XP</b>

<b>Networking:</b>	BSD sockets, TCP/IP, UDP, DNS (Bind), DHCP, RIP, IGRP, BGP, VPN, SNMP
<b>Security Technologies:</b>	Kerberos, LDAP, <b>SSL</b> , RADIUS, MD5, SHA
<b>Open Source Servers:</b>	<b>Apache</b> , OpenLDAP, <b>OpenSSL</b> , ISC-DHCP, OpenVPN, CUPS, Samba, MySQL, Postgresql, BIND, Sendmail, Courier mail
<b>Version Control Tools</b>	CVS, RCS

**Contact Information:**

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**PROFESSIONAL EXPERIENCE**

**University of Michigan, Ann Arbor, MI**

**September 2010 – present**

**Client Server Programmer Associate**

- ◆ Modify, create, deploy 'radmind' loadsets
- ◆ Prepare and coordinate for weekend shutdown of major internal datacenter.
- ◆ Provision servers and configurations for restructuring and division of responsibilities due to reorganization of ITCS and MAIS as ITS.
- ◆ Deploy and monitor new Linux kernel across hosting environment
- ◆ Deploy and configure new "white box" servers (primarily as database servers.)
- ◆ On-Call half-time (shared duty) for web hosting, database, and single-signon systems
- ◆ Document, document, document...
- ◆ Evaluate Barracuda Web Application Firewall for University of Michigan Web Hosting environment
- ◆ Customer Interaction as part of [Webmaster@umich.edu](mailto:Webmaster@umich.edu)

**Computing environments**

- ◆ UMCE Linux (Administer, Kernel builds)
- ◆ RedHat Linux (Administer)
- ◆ Mac OS/X (Desktop, Administer)

**University of Michigan, Ann Arbor, MI**

**May 2009 – September 2010**

**Database Associate (Linux System Administrator)**

- ◆ Modify, create, deploy 'radmind' loadsets
- ◆ Design, develop, deploy IBM system x3650 RAID monitoring tool
- ◆ Redesign Oracle backup tool to support Oracle Datapump
- ◆ Design, develop, deploy Oracle Standby/Replicant server monitoring tool
- ◆ Design, develop, deploy Oracle server error monitoring tool
- ◆ Design, develop, deploy Mysql server error monitoring tool
- ◆ Enhance MySQL "thread" monitoring tool
- ◆ Design, develop, deploy MySQL backup extraction tool

**Computing environments**

- ◆ UMCE Linux (Administer, Kernel builds)
- ◆ RedHat Linux (Administer)
- ◆ Mac OS/X (Desktop, Administer)

**Merit Computer Network Inc., Ann Arbor, MI**

**July 2005 – July 2007**

### Client/Server Programmer – Senior

- ◆ Designed, upgraded, and released Merit AAA/RADIUS server software including Kerberos 5, modified OpenLDAP, AFS/PTS, University of Michigan specific extensions, and Merit Shared Dial-in service extensions ( C ).
- ◆ Administered MICHK12/TTI subscription database, users, and e-mail system.
- ◆ Maintain, debug MichK12/TTI subscription CGI pages (Perl, SQL)
- ◆ Administered Merit Shared Dialin Service – update database, deploy configurations.
- ◆ Maintain, debug Merit Shared Dial-in Service configuration tools (Perl, SQL)
- ◆ Administered Merit Network Usage Reports
- ◆ Maintain Merit Network Usage Report programs (Perl, SQL)
- ◆ Performed occasional administration of AFS (Andrew File System), a network file system.
- ◆ Modified MichK12/TTI system to support user based renewal of subscriptions, including supporting credit card charging through Verisign
- ◆ Participated in FWNA-Salsa (a federation of universities sharing authentication of 802.11 wireless access for visiting faculty, staff, and students.)
- ◆ **Managed and administered Apache servers for MichK12/TTI for development, testing and production services including problem resolution with server side scripting.**

### Computing environments

- ◆ Solaris 2.6, 2.7, 9 (Desktop, Administer, Develop)
- ◆ FreeBSD 4.x, 5.x, 6.x (Desktop, Administer, Develop)
- ◆ SUSE Linux (Administer, Develop)
- ◆ Fedora Linux (Desktop, Administer)
- ◆ Mac OS/X 10.3, 10.4 PowerPC (Desktop, Administer)
- ◆ Windows/XP (Desktop, minimal Administer)
- ◆ Network file systems: NFS, AFS (User, Administer)

Final Salary: \$87,5000 / year

### Merit Computer Network Inc., Ann Arbor, MI

July 2000 – June 2005

### System Research Programmer III

- ◆ Deployed RADIUS authentication of early University of Michigan wireless/802.11 on Solaris/Unix Servers.
- ◆ Deployed RADIUS authentication of corporate staff wireless/802.11 access from Solaris/Unix servers.
- ◆ Designed, developed, deployed Michigan Teacher Technology Initiative (MichK12/TTI) end-user identity management and subscription management system under Solaris/Unix, using **advanced Perl** techniques including **object oriented perl**, Perl/CGI, and Perl/DBI to provide web and command line interfaces.
- ◆ Maintain, develop additional features in Merit RADIUS software – Regular expression matching, various logging and reporting options, various tuning facilities.
- ◆ Upgrade “nasconfig” from Perl version 4 to Perl version 5.
- ◆ Upgrade “cisco configuration collector” from Perl version 4 to Perl version 5
- ◆ Managed and administered Apache servers for MichK12/TTI for development, testing and production services including problem resolution with server side scripting.

### **Computing environments**

- ◆ Solaris 2.5, 2.6, 2.7 (Desktop, Administer, Develop)
- ◆ SunOS (Develop)
- ◆ FreeBSD 4.x, 5.x (Desktop, Administer, Develop)
- ◆ Dec Ultrix (Administer, Develop)
- ◆ Redhat Linux (Desktop, Administer, Develop)
- ◆ HP/UX (Administer, Develop)
- ◆ Mac OS/X 10.3, 10.4 PowerPC (Desktop, Administer)
- ◆ Windows/XP (Desktop, minimal Administer)
- ◆ Windows/9x (Desktop, Administer)
- ◆ Network file systems: NFS, AFS, SMB/CIFS (via samba) (User, Administer)

Final Salary: \$82000 / year

### **Merit Computer Network Inc., Ann Arbor, MI**

**July 1993 – July 2000**

#### **System Research Programmer II**

- ◆ Participated in design, development, and deployment of initial version of Merit RADIUS server (version 2) in support of Merit Shared Dial-in Huntgroup Support.
- ◆ Adapted UBC MTS version of domain name resolver library software for Merit MINOS environment.
- ◆ Designed, built, deployed, and maintained Lucent/Livingston Portmaster management utility, “nasmanager” written in C, using Unix BSD network socket() interface, and platform specific Makefiles for various Unix systems (SunOS, Solaris, FreeBSD, Red Hat Linux, SUSE Linux, DEC Ultrix) for Merit Shared Dial-in Service.
- ◆ Explored Cisco gateway IOS configuration for implementing GTE.Sprint TELENET gateway to TCP/IP (telnet) service.
- ◆ Maintained, debugged, and upgraded Merit Shared Dial-in AAA service on various Unix systems (Solaris, FreeBSD, SUSE Linux) using various scripting languages (Perl, Bourne Shell) as glue.
- ◆ Performed Y2K abatement work in general, in particular on Perl/CGI scripts for displaying Merit Shared Dial-in usage reports.
- ◆ Provided technical support for Merit Computer Network Inc. customer and client organizations with problems related to RADIUS, DNS, routing, and general problem solving.
- ◆ Design, maintain “unmp” (Ugly Network Management Protocol) compatible data collection and presentation system (dial up port and huntgroup usage and utilization monitoring)
- ◆ Responsible for Dumb terminal HELP/MENU system – prototype in Perl, under Solaris, later re-implemented with modified telnetd and modified lynx (in C) under Solaris and Linux.
- ◆ Shared technologies and solutions with Merit Computer Network Inc. members and customers – individually and through quarterly meetings of the Merit Joint Technical Staff (MJTS)

### **Computing environments**

- ◆ Solaris 2.5, 2.6 (Desktop, Administer, Develop)
- ◆ SunOS (Desktop, Administer, Develop)
- ◆ Dec Ultrix (Administer, Develop)

- ◆ HP/UX (Administer, Develop)
- ◆ FreeBSD 3.x, 4.x (Desktop, Administer, Develop)
- ◆ RedHat Linux (Desktop, Administer, Develop)
- ◆ Windows/9x (Desktop, Administer)
- ◆ Network file systems: NFS, AFS (User, Administer)

**Merit Computer Network Inc., Ann Arbor, MI**  
**December 1987 – July 1993**  
**System Research Programmer I**

- ◆ Configured, debugged, deployed UBCnet/HIM 3270 protocol converter for Merit/NSFNet-2, University of Michigan Libraries.
- ◆ Maintained, debugged, deployed MTS Kermit implementation
- ◆ Update PDP-11 object code linkage editor
- ◆ Redesign, develop, deploy, operate new Merit Statistics and Billing process and software – reconciling session logging data into billing reports in Plus.
- ◆ Designed, developed, deployed, and maintained Cisco Configuration Collector (perl scripts on Solaris/Unix to collect Cisco configuration information from 300+ routers on a daily basis.)
- ◆ Design, implement, distribute MNETAUTH – Merit Network Authentication, two implementations, C and Plus
- ◆ Re-write & deploy Merit Dialin “Host Locator” (name to MINOS Network address mapping system) including configuration tools and authentication/password interface.
- ◆ Participated in specification RADIUS Accounting requirements with Livingston Enterprises
- ◆ Shared technologies and solutions with Merit Computer Network Inc. members and customers – individually and through quarterly meetings of the Merit Joint Technical Staff (MJTS)

**Merit Computer Network Inc., Ann Arbor, MI**  
**August 1985 – December 1987**  
**Computer Systems Consultant I**

- ◆ Merit network Helpdesk support.
- ◆ Administer GTE Telnet / ADP Autonet rebilling program (software)
- ◆ Create and maintain local support for KERMIT distributions.
- ◆ Administer VAX/VMS “RUAC” for SDSC (San Diego Supercomputer Consortium).
- ◆ Profiled technical assistance for end-users of Merit Dial-in, GTE/Sprint TELENET service, and ADP/AUTONET service.
- ◆ Provided help desk and technical assistance for the University of Michigan Computing Environment.

**OTHER RELEVANT EXPERIENCE**

**Home, Ann Arbor, MI**  
**July 2007 – April 2009**

**Projects, Self-Improvement, Family**

- ◆ Build, configure, install Apache 2.2 server with support for multiple virtual hosts, mod\_perl, mod\_php
- ◆ Developing role based IPFW firewall and DNS management system

- ◆ **Manage Apache virtual host logging for error and access management, including CGI, mod\_perl, and mod\_php DHTML development**
- ◆ Build, configure, install Courier mail service with IMAP support
- ◆ Manage local DNS server for naming home LAN devices (6 computers, printer, webcam, Wii console, Apple Airport, various other roaming devices.)
- ◆ Manage local DHCP server for IP and routing administration of various devices.
- ◆ Manage IP Firewall and IP NAT service for protecting home LAN devices
- ◆ Various Perl scripts for managing large photograph library
- ◆ Explore various backup technologies – bacula, amanda, etc.
- ◆ **Learning PHP and MySQL by redeveloping personal web pages as DHTML**
- ◆ Learning MySQL and Postgresql constraints, triggers, and procedures
- ◆ Learning and applying **ECMA/Javascript**
- ◆ Modified FreeBSD kernel ethernet driver to reduce logging of flakey cable modem up/down transitions
- ◆ Modified FreeBSD kernel NFS/NLM (NFS locking module) to correct bug and enhance logging & debugging
- ◆ Re-write FreeBSD “rcorder” (system service initialization ordering) program to correct error handling and improve reliability
- ◆ Manage FreeBSD based NFS server disk utilization, quota management.
- ◆ Monitor Home LAN utilization with “cacti” (concerned about COMCAST 250G/month data transfer limit.)
- ◆ Manage home mail server for imap access with Courier/Courier-Imap
- ◆ MySQL administration via `mysql` command line and `phpmyadmin`

#### **Computing environments**

- ◆ FreeBSD 5.x, 6.x, 7.0, 7.1 (Desktop, Administer, Develop)
- ◆ openSUSE Linux (Desktop, Administer)
- ◆ Fedora Linux (Desktop, Administer)
- ◆ Ubuntu Linux (Desktop, Administer)
- ◆ Mac OS/X 10.4, 10.5 / PowerPC & Intel (Desktop, Administer)
- ◆ Network file systems: NFS (User, Administer, Fix Protocol Units)

**Environments:** Sun Solaris (2.5 to 9), FreeBSD, SUSE Linux, Red Hat Linux, Mac OS/X, Windows/XP, Oracle, Informix, Cisco IOS, Sun NFS, AFS, Apache, Netscape Webserver, MTS (Michigan Terminal System)

**Educational qualification:** Bachelor of Science & Engineering (BSE) – Computer Engineering, University of Michigan, 1987

**Miscellaneous:** 3 character University of Michigan “uniquename”; 6 digit SlashDot uid.