

Robert J. Emanuele

Seeking a position in computing technology architecture, development, and management with growth and learning opportunities.

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Colbert, WA

2016-Current **Rackspace US, Inc.** Colbert, WA /
Software Development Manager, Rackspace Monitoring and Intelligence San Francisco, CA

Managed Rackspace's Monitoring, the in-house monitoring and alerting platform, through a period of growth and new developments. Worked to integrate Rackspace Intelligence, the monitoring and metrics single-pane-of-glass, into Rackspace Monitoring to provide the company with new proposals for insights into the metrics captured.

- Improved Rackspace Monitoring's planning and estimates through better use of stories
- Released Apache Kafka into Rackspace Monitoring to create a robust metrics pipeline
- Worked with the team to develop a new service to monitor our customers' private networks
- Collaborated with other teams such as Rackspace Private Cloud and Rackspace Business Automation to develop features to meet business needs and improve support needs through monitoring
- Completed Rackspace's Emerging Leadership Program to gain new management skills

2012-2015 **Rackspace US, Inc.** Colbert, WA /
Team Lead/Software Development Manager, Rackspace Monitoring Agent San Francisco, CA

Developer and Lead for the Rackspace Monitoring Agent Team. Rackspace Monitoring Core and Agent provides external and system level monitoring for hosts inside and outside of Rackspace.

- Enhanced the Agent with numerous Windows metrics for the OS and SQL server
- Improved configuration tools in order to better manage the Agent and Monitoring System through automation such as Chef, Puppet, or Ansible
- Added support for Agent features to the monitoring core and API to improve introspection into the agents
- Improved the Agent plugin system for better integration with Windows hosts and scripting using Powershell or other scripting languages
- Facilitated team collaboration for the monitoring Dom0 and the collection of system discovery information: packages, configurations, system overview
- Worked on the development of Luvit (LuaJIT + Libuv) and helped realize version 2.0
- Supported my team by providing project status and proposing new features to upper management

2005-Current **BitStruct, LLC** Colbert, WA
Owner, Consulting Firm

Owner of a computing technology design and consulting firm.

- Managed relationship with our vendors for just in time delivery and on-site buildouts.
- Sales of VoIP Systems and Endpoints Supporting SIP and H.323
- Value-Added-Reseller and Integrator of Vonage VoIP Services
- Created a Configurable Notification System for Asterisk Open Source PBX
- Developed a Python/Web based Configuration System for Asterisk
- Created deployment tools and software for an 80 CPU computing system using Fedora Core and Unified Parallel C
- Consulted to Ask.com for the Bloglines Project
- Consulted to Rackspace US, Inc on Cloud Monitoring

2007-2012 **Crystalfontz America, Inc.** Spokane Valley,
Lead Firmware & Software Engineer WA

New product development including designs, specifications, and implementations. Crystalfontz designs and manufacturers custom LCD modules and Single Board Computers for a variety of markets.

- Created an encrypted bootloader to protect the company's intellectual property and provide users with upgrade capabilities in the field.

- Designed and implemented the framework for their next generation ARM Cortex-M3 and the emulation system to provide backwards compatibility with their existing LCD modules.
- Ported FreeRTOS and Newlib (libgloss) to ARM9 and Cortex-M3 platforms
- Created interface software to drive Sitronix controlled displays
- Contributed patches to the Linux kernel and U-Boot for the Atmel SD card interface
- Ported Linux to our CFA-910, an Atmel AT91SAM9G45 platform, including drivers for E Ink power management, battery charging, and E Ink framebuffer interface
- Manage the company-wide Subversion and Git repositories
- Wrote Windows USB drivers for COM port emulation

2005-2007 **Ask.com, Bloglines.com** Colbert, WA
 Senior Software Engineer

Created feature additions and improvements to Ask.com's Bloglines product including the 3.0 redesign. Bloglines is a web-based aggregator for standard news feed types including RSS and Atom.

- Generalized their caching solution for use with Users, Subscriptions, and Sites
- Redesigned and implemented their system for tracking read and unread articles
- Worked on a load balancing system for distributing feed data across multiple servers
- Improved the open-source apr_memcache to include support for retrieving data from multiple keys in one pass.
- Security fixes and improvements to diffuse client side scripting
- Created a series of Publisher Tools for feed publishers to authoritatively claim a feed they own within Bloglines and control its appearance
- Created tools to communicate with blogging services using the Atom API and XML-RPC

2005 **The Technical Committee** Colbert, WA
 Senior Development Engineer

Validating documentation and software relating to the Civil Action of the United States of America v. Microsoft Corporation. Implementing Microsoft communication protocols and associated servers as a method of testing the documentations' completeness with regard to the settlement Section III E for the Department of Justice.

- Settlement: <http://www.usdoj.gov/atr/cases/f200400/200457.htm>
- Writing implementations from scratch of Microsoft's Rights Management Server, Media Digital Rights Management Server, System Message Block (SMB), Common Internet File System (CIFS), and Print/Fax Services
- Protocols Implemented on Fedora Core 3 Linux using TCP/IP, DCE RPC and SOAP
- Experience with XrML creating a Microsoft Compatible Rights Management System
- Created SOAP Service Modules for Apache using gSOAP
- Linux System Image Deployment Service for Developers and Integrators

2004-2005 **Getronics, Financial Business Solutions** Liberty Lake, WA
 Financial Software Engineer

Software engineering and development of loan software for several financial institutions including the largest financial institution in the world.

- Interface Design and Programming
- Implementing of new Loan Qualification Features such as new Collateral Requirements for Using Collateral in the Refinancing of a Balloon Payment
- Online Loan Approval and Real Estate Qualification Tracking Systems
- Interfacing with SQL Databases for Loan Application Processing
- Communications Programming with TN3270 to Mainframe Connectivity for Loan Booking
- Web Based Project Management and Versioning Tools with Microsoft .NET and C#

2000-2004 **Cyan Worlds, Inc.**
Senior Network Programmer

Mead, WA

Architecture design and implementation of a network protocol and server system for a massively multiplayer online game and a LAN based game. Various engine programming including logging systems, statistics tracking, voice recording systems, multi-platform threading library, and stream libraries for reading and writing data across platforms. Managed the server systems and content rollout.

- Titles collaborated on: RealMyst, Uru: Ages Beyond Myst (Single player and Live Online), Uru Expansion Packs 1 and 2, Myst 5 (working title)
- Design of Web-based Administration and Monitoring Tools in Perl and Python
- Audio Programming for Voice Chat in a 3D Environment
- Low Latency Reliable UDP Protocol Design and Implementation for Gameplay and Voice
- Apache HTTP Web Server Authentication Module Design and Implementation
- Design of Customized Linux Based Operating Systems and Kernels for an MMO
- Python Embedding and Binding to C++ for Scripted Clients
- Server Porting and Seamless Interaction Across Windows, Linux, IRIX, and NetBSD
- Network Packet Sniffer Plug-ins Design and Programming
- Network Design and Architecture for a Clustered Server System
- TCP Network Packet Encryption with SSL and UDP Packet Signing for IP Spoof Protection
- Interviewed and Expanded the Networking Staff with New Programmers and Interns
- SNMP MIB Design and Implementation
- Interfaced with SQL Databases for Game State, Accounts, and Logging

1995-2000 **Shore Information Services, Inc.**
Owner/Consultant

Allenwood, NJ

Operated an independent software, hardware, and data communications contracting firm. Set specifications and budgeted several clients as a contractor and subcontractor. Added data and voice networks for several Local Exchange Carriers. Wrote software for Lucent's PathStar (VoIP) product.

- Local and Wide Area Networking (Ethernet, Frame Relay, Channelized T1, ATM over DS3, OC3, Point-to-Point Wireless, Secure Wireless)
- System Programming and Administration on Windows (through XP) and UNIX (IRIX 6.x, LINUX through 2.6, Solaris through 9)
- Application Design for Simplifying Dial Plan Creation and Bill of Material Generation Systems
- Linux Driver Development and Modifications on Realtek 8139 and Prism2 network drivers
- Embedded System Controllers: Design and Programming
- Voice over IP product development, deployment, and network integration
- Site deployment management and coordination of Lucent PathStar Systems (1998-2000)
- Worked as part of Lucent's PathStar Product Management Team
- Clients: Lucent Technologies Data Networking PathStar Project, Lucent Technologies Global Product Compliance Laboratory, Renaissance Networking Integration, Inc., 3Com Corporation, Lucent Technologies Global Environmental Health & Safety, Evergreen Data Associates, Inc., Media Vision, Inc., Delfino & Parker, Inc.

1993-1998 **Lucent Technologies Global Product Compliance Laboratory**
Network System Designer & Administrator, Test Technician

Holmdel, NJ

- Designed Compliance Test and System Automation Software
- Designed Applications for Test Report Generation
- Created a Local and Wide Area Internetwork
- Performed Electromagnetic Compatibility (EMC) Compliance Testing

Education

Bachelor of Science, Lehigh University, Bethlehem, PA

- Research with Prof. Terrance Boulton in Omnidirectional Computerized Camera Systems and Video Networking
- Research using Video Capture and Network Transmission with Embedded Systems and TCP/IP
- Research into Computer Audio/Video Compression and Network Transmission with Wired and Wireless Networks for Wearable Computing
- 3D Graphics Programming using OpenGL
- Voice Conferencing over TCP/IP in a Simulated 3D Environment

Professional Memberships

- Lifetime Member of the Armed Forces Communications and Electronics Association (AFCEA)
- Member of the IEEE

Professional Skills

- Programming Languages and APIs: C, C++, C#, Lua, Visual Basic, Perl, Python, Java, Node.js, PHP, SQL (MSSQL, MySQL, Oracle), PIC C, 8085 Assembly, ARM Assembly, MIPS Assembly, Win32 API, .NET 4.5, Winsock, LibC (Linux, Newlib), OpenGL, MFC, COM, ASP, Clearsilver, Berkeley DB, Chef, Apache Thrift, and Apache Portable Runtime
- Data Network Protocols: TCP/IP Suite, Ethernet, ATM, SSL, SOAP, HTTP, SIP, MGCP, RTP, H.323, LDAP, RIP, OSPF, BGP, SNMP
- Telephony Network Knowledge: ISDN (PRI, BRI), SS7, VoIP, Class 5 Vertical Features, North American Numbering Plan
- Network Hardware: Cisco Routers, Switches, and Firewalls; Nortel Data Switches and Telephony Switches (DMS500, DMS100); Lucent Routers, Data Switches, Telephony Switches/PBXs (Definity, Pathstar, Merlin); Wireless Access Points by many manufactures, Custom Designed IP PBXs
- Electronics: Single Board Computers, GPS Chipsets, Embedded System Design and Programming, PIC Microcontrollers, ARM Microcontrollers and Microprocessors (ST, Atmel, NXP, TI, Luminary, Freescale, Nuvoton)
- Markup Languages: HTML, LaTeX, SGML, XML

References available upon request