

DEREK SIMKOWIAK

EMPLOYMENT

2012 – Present: **Synapse Product Development** Seattle, WA

Sr. Software Engineer

- Embedded firmware engineer on multiple products in an agile environment, incl. bare metal, Protothreads, and Real Time Oses.
- Designed and implemented tailored radio and security solutions in firmware (provisional patents filed), designed a SPI peripheral protocol, implemented Apple MFi over USB and iAP Auth over I2C.
- Authored firmware apps, HAL device drivers, UART shells, build systems, test scripts w/logging, scientific data analyses, and customer-facing White Papers and Proposals.

Applied skills: C, C++, Python, shell, Makefiles, IAR Workbench, SDCC, X Code, gcc, gdb, OpenOCD, FreeRTOS, BeRTOS, Protothreads, bare metal, DMA and IRQ drivers, Saleae Logic Analyzer, basic circuit design & hardware mods, crypto, TCP/IP, SPI, I2C, 802.11, 802.15.4. Processors targeted (w/RAM): ATMega328 (2 KB), TI 8051 (1 KB), STMF4 (192 KB), STMF1 (8 KB)

2008 – 2012: **Cool Software Technologies** Lynnwood, WA

Owner, CEO

- Various high-tech projects, incl. local & international teams
- Software development, deployment, project management, consulting engagements. Details at: <http://www.cool-st.com/>

Fall 2005 – 2008: **Panasonic Avionics Corp.** Bothell, WA

MTS III, Software

- Project manager, designer, team lead, and core developer for multiple projects
- Touchscreen application design and international project management (for on-aircraft IFE maintenance software)
- High performance, multi-threaded, distributed XMLRPC server software development
- Enterprise ACL and Session System (Single Sign-On, integrated with LDAP and SQL via XML web services)
- Self-diagnostic BITE engineering data display (from aircraft via satellite)

Applied skills: XMLRPC and XML, HTML, Apache, PHP, Python (daemons, scripts, mod_python and Zope), C++, Unix shell, some Perl, CVS, optimization, data center design, advanced MySQL, sysadmin and CM (wrote software build systems), GUI design and implementation, project management, proposal and documentation writing, team lead, coder

EMPLOYMENT (cont'd)

Spring 2005: **UIEvolution Corp.** Bellevue, WA
Software Design Engineer

- Specialized clustered server development (Apache module and raw C socket servers for >10K concurrent connections per node)
- Cell phone client and server software development

Applied skills: Java (incl. JSP), C, C++, Unix shell scripts, APAPI, XML, HTML, RTSP/RTP streaming media, SVN, VPN/firewall setup, load testing, embedded development, server cluster design, FreeBSD's kqueue, Solaris' /dev/poll, Linux's sys_epoll(), proposal and documentation writing

2001 – 2005: **Interactive Threshold Corp.** Kirkland, WA
Lead Architect

- Customer-driven software development and support under widely varying environments (.NET, Unix servers, touchscreen kiosks, etc.)

Applied skills: Python, C, C++, Unix shell scripts, APAPI, XML, HTML, advanced Javascript, Windows Media streaming and troubleshooting, VPN/firewall/network/backup/server monitoring and administration, security audits, server clusters (incl. LVS), DNS, PKI, databases, public event mgmt., project mgmt., team mgmt., DVD production/deployment, technical presentations, proposal & documentation writing

2000 – 2001 **Aventail Corp.** Seattle, WA
Senior Software Engineer

- Clustered security server product design, development, and maintenance

Applied skills: C, C++, Unix shell scripts, APAPI, HTML (parser development), advanced Javascript, HTTPS protocol development (proprietary cluster key sharing protocol similar to SPREAD), F5 Big IP load balancers, TCP/IP packet analysis, customer interaction

1999 – 2000 **NetManage, Inc.** (formerly Wall Data) Kirkland, WA
Senior Unix Developer

- Complete management of their Unix product "Cyberprise Security Server" and cross-platform Java development (incl. C, C++, NSAPI, CVS admin, AWT, Beans, Swing)

1996 – 1999 **Independent Consulting** Lynnwood, WA
d.b.a. K&D Development

- Software development (serial packet analysis, SNMP development, international team lead, ColdFusion™)

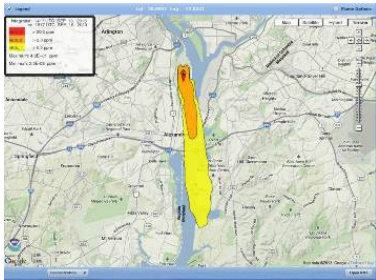
1994 – 1996: **CompuServe (SPRY Division)** Bellevue, WA
Project Lead

- Managing design specifications, feature additions, licensing strategy, and prototyping

EXAMPLE PROJECTS

Hydrogen Fuel Cell Charger (Firmware)

I worked on the firmware team for a consumer fuel cell device. Features included hydrogen fuel management, temperature measurement, event logging, and safety modes. My code included HAL drivers, USB, I2C, Mfi and iAP protocols, and a flash partition manager.



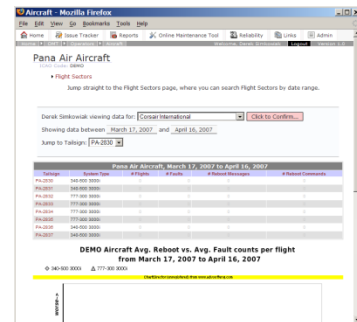
NOAA Joint Dispersion Modeling System

http://www.arl.noaa.gov/Joint_Dispersion_Modeling.php

I developed software that offers an advanced, interactive web interface for running simulations on two atmospheric modeling systems. This was a joint project of NOAA's Air Resources Laboratory and NOAA's Office of Response and Restoration, and I worked closely with team members from both offices. This work included access to restricted computing resources and required an FBI background check.

Aircraft Maintenance Tool (for Panasonic Avionics)

I led a senior 'agile' software development team to develop an engineering maintenance application for PAC's latest IFE products. It processes engineering data from the aircraft (transmitted via satellite) and displays it in real time on a web-based interface. Multiple protocols, data formats, and back-end architectures were involved.



On Demand TV (Launched in Japan, Mar. 2005)

http://www.AkihabaraNews.com/en/news_9308.html

From the Article: "ODTV, short for On Demand TV, means that you can watch what you want, when you want to and on what you want." I was on the team that developed the client side of this service (the embedded Linux user interface for the set top box). This was a major service release in Japan.



Targa 3D Game Engine (Hobby project)

I developed an OpenGL-based BSP game engine in C. I integrated 3rd-party C, C++, and Python libraries into a modular architecture that included scriptable entity behavior and a widget-based GUI system.

SNMP Proxy for High Bandwidth Microwave Radio Transmitters

I wrote Linux server software to integrate 2.4GHz DS3 Radio Hops into an HP OpenView-based Network Operations Center. The stateful SNMP proxy translated packets to PCOM's proprietary serial protocol.

SUMMARY OF QUALIFICATIONS

- *Software Development:* C, C++, Java (incl. AWT, Swing, Beans), PHP, Python (incl. language extensions), Perl, shell (bash, Korn, C), make, NSAPI, APAPI, ColdFusion, ASP and .NET, XML, HTML, 3D Development (OpenGL, OpenAL, BSPs, Cal3D, OSG, ODE), version control (CVS, SVN, git, bzt, Perforce, VSS), embedded firmware, device drivers, 'agile' software development, team lead, project management
- *Protocols:* TCP/IP (incl. OSI model, socket programming, UDP), SNMP, SMTP, IMAP, HTTP, SSL (TLS), ssh, sftp/scp, FTP, SMB, WebDAV, database protocols (SQL, LDAP, ODBC), RTSP/RTP video streaming, SPI, I2C, and other proprietary protocols
- *Networks:* 802.11, 802.3ae, 802.15.4, VPN, DMZ (multi-zone firewall and proxy management), security audits, metered patch deployment, ssh, DNS, PKI, file and web servers, backup mgmt., H.A. server clusters (incl. Big IP F5s and LVS-NAT directors), security (incl. security audits, incident response, and intrusion detection)
- *Databases:* MySQL, OpenLDAP (slapd), Berkeley DB, Postgres, msql, MS-SQL, ActiveDirectory (and others), schema design (w/normalization), advanced query optimization (incl. index cardinality analysis), administration (incl. configuration, replication, backups, user permissions, etc.)
- *Operating Systems:* Linux (expert), Unix (Solaris, HP-UX, Irix, FreeBSD), Windows, Mac OS X
- *Brainbench™ Certifications (2001):* *Linux Administration (General)*, *Linux Administration (Red Hat)*, *C Programming*
- *Other:* Open Source Software / Free Software development and contribution, presenter at LinuxFest NorthWest (on Python, SCADA, Virtualization), wrote data analysis code for the Super Kamiokande Neutrino detector (1996), coach for F.L.L. Lego Robotics competitive team at Terrace Park elementary.

“...Derek’s skills as a software developer proved themselves valuable to our team time and again. I’ve lost track of the number of times over the years Derek has solved seemingly impossible problems under ‘pressure cooker’ deadlines.”

Michael R. Morrisroe
Vice President/Executive Producer
Tri-Film Productions, Inc.
(Letter of Recommendation, late 2004)

“Derek is a strong performer, extremely dedicated and makes a valuable contribution to the team. He shows leadership tendencies, and takes the initiative to keep the team on task. [...] Even under somewhat difficult circumstances, Derek has pulled team members together and accomplished the required tasks. [...] He has continually helped other developers in other departments resolve development issues.”

(Corporate Annual Performance Evaluation, 2007)

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