

Andrew L. Abendschein

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Qualifications

Proven success in commercial software development-encompassing Java, Linux, Windows, networking, GUI, OOP, C/C++, cellular, embedded systems, data acquisition, training, team building, product development, engineering support, installation, and troubleshooting.

Skills

Software Engineering

GUI, OOP, Java (including OCAP, Swing, JDBC, JEE, JavaFX, reflection, RMI, JMS), C/C++, assembly (ARM, x86, Motorola 68000, 6809, and DSP 56000), multi-threading, networking, RS232/485/422, Hibernate, MySQL, CIM/WBEM, XML, SLP, Web Sockets, JavaScript, design patterns Web Services.

Operating Systems & platforms

Linux, Windows (including DDE, OLE, DLL, device driver), Jetty, GlassFish, FreeRTOS, proprietary embedded multi-tasking/multi-processor systems.

Programming Environments

Eclipse, Atmel Studio, Visual Source Safe, Subversion, CVS, Perforce.

Management Experience

Agile and Unified Processes development, Interviewing, Hiring, Mentoring, Employee evaluations

Communications

Presentations, Specifications Development (i.e. requirements elicitation leading to Use Cases), Equipment Justification, Customer Service, Client Liaison, Trusted to represent companies at trade shows and company visits

Selected Employment Highlights

DLM Newco née PowerTagging – Software Architect, then Director of Software

Engineering (startup)

March 2010 – December 2015

- Primary architect and developer of smart-grid power line communications infrastructure software comprised of a number of distributed components hosted on both embedded RaspberryPi (Linux) & Atmel ARM (FreeRTOS) and hardened, enterprise-class server platforms.
- Mentor of small team of developers, focused on OO design/OO architecture/implementation (using C and Java/Java EE), best practices, etc.
- Integrated peripherals including cellular modems and GPS modules into complete solution.
- Interface with hardware and DSP team members.
- Selected and implemented core development tools & processes (i.e. Jenkins, Maven, GlassFish, etc.)
- Synchronous/Asynchronous Web Services design and implementation (leveraging WS-Eventing and WS-Security specifications)

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Sentosa Technology – Senior Architect

August 2009 – March 2010

- Member (contractor) on team developing the CableLabs OCAP Reference Implementation
- Worked primarily on DVR implementation using GStreamer/GLib

Vidiom Systems – Director of Engineering

October 2007 - July 2009

- Developed strategies to introduce IPTV-related technologies into the North American market that were developed by Osmosys (a sister company located in Poland). These technologies included MHP software stacks for STBs as well as server-side Service Delivery Platforms (aka SDPs)
- Analyzed prospective projects for technical merit, and assisted in authoring work proposals
- Lead effort to port Java-based middleware to various STB platforms. This included identifying and defining business processes to facilitate the porting process.

Vidiom Systems – Engineering Manager & Tech Lead

November 2004 – September 2007

- Performed as a cable television technology expert with a team of SOA consultants to identify strategies and technologies to unlock value for one of the top-tier cable television providers.
- Hired and managed a team of up to 6 Principal and Senior Engineers in a matrix-managed company.
- Conceived, architected and participated in development of an automated system for testing STBs (or just about anything else). This system makes use of distributed technologies to test multiple STBs simultaneously, and includes an Eclipse plugin that functions as a user monitoring and control console. Key features include use of SOA technologies in an open architecture to facilitate integration into a customer's test environment.
- Architected and implemented a portion of the OCAP Home Networking APIs, on top of a Universal Plug and Play (UpnP) stack for use on an OCAP Host Device. This project also involved the development of a JPEG still image handler to plug into JMF (Java Media Framework).
- Server-side technical lead for the development of an OCAP monitor application. The server is a J2EE-based, 3-tiered application that makes use of LDAP for user authorization. This application was the first of its kind, and makes use of policies that can be downloaded to OCAP Host Devices singly, or *en masse*. My involvement in this large project included defining development processes (UP), resource tasking, development of client-side OCAP test applications, specifications research, object carousel interfaces, etc.

Vidiom Systems – Principal Software Engineer

June 2003 - October 2004

- Designed and implemented the TCP/IP interaction subsystem for CableLabs' automated test system used for testing OCAP Host Devices.
- Analyzed and optimized performance of C/C++ graphics drawing primitives for Scientific

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Atlanta STBs, improving the performance of some routines by up to 25x.

- Implemented Platform-dependent portion of a portable C++ graphics drawing package on a Windows MFC/DirectX application which simulates cable STBs.

Aztek Engineering – Senior Software Engineer

October 2002 – June 2003

- Designed and coded a prototype network element management system for a telecommunications network access product. This embedded C++ application was designed to interact with a browser-based user interface or a remote system using XML command/response protocols.
- Developed graphical configuration editor using Java/Swing for the definition of faults and their relationships with managed objects modeled using CIM. The resultant configuration (in XML format) is used to configure high-availability computer systems software.

CreekPath Systems (startup) – Senior Software Engineer

November 2000 – October 2002

- Designed and wrote a network management agent to monitor AIX Volume Manager. Data is collected at scheduled intervals from the ODM and from standard API calls, formatted into an XML document and sent to a central server for processing.
- Designed and implemented GUI client application that provides users the ability to interface with an EJB-based workflow engine. This application provides for user task execution and real-time graphical monitoring of multiple workflow instances for the management of storage area networks (SANs).
- Designed and wrote a GUI client for the graphical display and manipulation of SAN network elements in the form of a graph of interconnected nodes. Features of this application include zoom, 'thumbnail' view, multiple layout strategies, and alarm status.
- Designed and wrote a Java-based framework application used to host an arbitrary number of task-specific network management sub-applications (much like Eclipse plugins). Key design considerations included end-user ease of use, the ability to add and remove plug-in applications at run-time, and a consistent, integrated user experience.
- Designed and wrote several utility applications to manage a comprehensive logging system for a large, real-time distributed application.
- Researched Java-based network technologies such as Jini, Jiro, Java Web Start, RMI, and WBEM to ascertain their usefulness for the management of SANs in ISP and Enterprise computing environments.

Econvergent (startup) – IT Developer

April 2000 – October 2000

- Performed in a tech-lead capacity to implement a Customer Relationship Management (CRM) solution in an Internet/virtual private network - hosted environment. My responsibilities were to identify customer's business needs and tailor the product to suit those needs.

Aztek Engineering – Senior Software Engineer

May 1998 – April 2000

- Designed and wrote telephone access network element management system (EMS) GUI using

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Java. This GUI displays, and allows users the ability to manipulate a set of managed objects based on a GDMO management information tree (MIT) that is maintained remotely by an agent in the access network element. The GUI displays at a glance the alarm status of all managed objects in the MIT. A major feature of this GUI is the ability to add managed object GUI classes after deployment without having to rebuild/deploy the main application. This innovative multi-threaded application uses Swing, JDBC, reflection and TCP sockets. Traveled to Sweden to demonstrate the application and equipment to engineering staff of the national telephone company.

- Wrote multimedia Windows application to demonstrate the capabilities of a high-speed digital telephone line multiplexer. This multi-threaded application takes advantage of Windows TAPI, RAS, and TCP sockets APIs, as well as C++ Builder multimedia programming APIs.
- For a telephone access network: wrote embedded V5-based call signaling interface software in C++, a Windows-hosted GUI simulation program to emulate a remote terminal, a scripting engine to automate call signaling scenarios, and traveled to Taipei to do final systems integration with the client's engineering personnel.
- Architected and wrote a Windows WDM device driver for a PCMCIA card containing a cell phone and wireless modem. This device driver was written using Visual C++ and Driver::Works. Part of this project also involved creating a tuple editor and a GUI test application.

SuperFlow Corporation – Software Engineer

October 1988 – May 1998

- Hired and directed a small team of software developers.
- Architected and wrote Windows software to manage multiple lane, networked automotive emissions test centers in Mexico City. Participated in meetings in Mexico City attended by representatives of the Mexican government, concessionaires, and competing companies; negotiated development schedules and system features; implemented code changes; and performed on-site training, installation, and troubleshooting. This system was widely acknowledged to be the highest quality, and most productive system of those available on the market.
- Conceived, architected, and developed significant portions of a Window GUI suit of test applications (using OWL) for controlling and monitoring engine and chassis dynamometers. This project involved writing NETBIOS communications routines and specialized widgets to display meters, bar graphs, x-y stripcharts, etc.
- Wrote various communications interfaces including NETBIOS, RS232, RS244, Echelon LonWorks, SAE 1922/J1708/J1587, etc.
- Completed digital filter and control systems work on a high-speed DSP data acquisition and control computer used for monitoring and controlling electrical loadbanks during testing. This system measured 3-phase current, voltage, frequency, and power factor in real-time.
- Developed numerous programs for multi-tasking, multi-processor real-time embedded data acquisition and control systems.
- Represented company at industry meetings and trade shows (SAE and TMC).
- Performed roles in customer support, sales support, and inter-company liaison functions.

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Additional Professional Projects

- Authored CimNavigator (available for download at <http://www.cimnavigator.com>), a Java Swing-based graphical browser application that can be used to manipulate (create/modify/delete and invoke methods on) arbitrary CIM instances and their associations. This application can also be used to navigate associations between CIM objects hosted in local or remote CIMOMs.
- Presented CimNavigator to the wider network management audience at the inaugural Management Developer's Conference in Santa Clara, CA in December 2005.
- Developed Internet-based monitoring system for our community irrigation pump house. This system, implemented on an embedded Linux server using C/C++, reads real-time data from a Siemens S7-200 PLC and posts the data as an HTML form to a CGI script running on the community web server. The CGI script then formats the data into an HTML page for viewing, and writes data to a log file for of-line data analysis. This system also incorporates a 'watchdog' that sends out email notifications if data hasn't been received from the Linux server within a time window of ~30 minutes.

Education

Completed graduate-level Software Engineering course presented by the University of Colorado.

Completed an Object-Oriented Analysis and Design class presented by Valtech.

Audited several Telco classes presented electronically by the University of Colorado.

Completed graduate-level coursework in Analog Filters and Digital Control Systems, University of Colorado at Colorado Springs CO

BS, Electrical Engineering, Colorado State University; Fort Collins, CO

BS, Wildlife Management, Texas A&M University; College Station, TX