

## KEVIN L. SHORT

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### PROFESSIONAL OBJECTIVE

A hands-on position, Managing or Leading a Software Development, Architecture, or Quality Assurance team, utilizing over 30 years' experience in software architecture, design, implementation, test, deployment and management.

### BACKGROUND HIGHLIGHTS

Voice over IP • Embedded Systems • Real-Time Systems • Java Technologies • Network Management Systems • Optical Networking • SNMP • Robotics • XML Technologies • J2EE • Web Services • Object-Oriented Design & Analysis

### PROFESSIONAL EXPERIENCE

#### **Technical Director / Consulting Engineer / Principal Engineer, Engineering Integration & Test: Cedar Point Communications, Inc., Derry, NH. (Apr 2005 – Present)**

- Daily hands-on management and operation of a high-bandwidth test facility, capable of simulating 250K cable telephone subscribers, for each of 36 development/test chassis. Each chassis connected to eight Gigabit optical networks with redundancy; to development and management networks. The goal being to perform daily smoke, load, and regression testing of SAFARI carrier-class Voice over IP (Media Switching System), and SafariView (Element Management System).
- Proactively isolated performance issues and provided timely support of development and test teams, working closely with software and hardware developers, on both embedded systems and EMS.
- Responsible for all budgeting, planning, and operations of this complex, dynamically expanding and changing lab facility.
- Managed the teams responsible for daily smoke, load, and regression testing, and for all lab operations, and for all (non-IT) developer and tester troubleshooting and support.
- Received several President's Awards by achieving technical goals for international product markets, remote development facilities, and integrating new technologies in record breaking time.

#### **Consultant: Quintron Systems, Inc., Santa Maria, CA. (Dec 2004 – Apr 2005)**

- Integrated Facial Biometric Devices for an Access-Control System. Developed plug-in modules supporting distributed facial biometric devices. Supported use cases for subject enrollment, standalone identification, and verification in conjunction with card readers.
- Developed multi-threaded application, device drivers, and Java SWT/JFace GUI interfaces, with a persistent store managed with Hibernate.
- Cross-platform access control system supported Windows and Linux, and was database-independent, supporting SQL Server, Sybase, Oracle, MySQL, embedded databases, and more.

#### **Software Engineer: Cellular Specialties, Inc., Manchester, NH. (Dec 2004 – Apr 2005)**

- Developed embedded software for a Digital Repeater (Bi-Directional Amplifier) for in-building wireless solutions. Developed SNMP MIB and agent; event reporting protocol; inter-process communication, command line interpreter; low-level hardware interfaces for SPI, I2C, PCMCIA, USB, A/D, digital I/O.
- Introduced software engineering practices; source code control; software defect management; software life cycle management; mentored team members.

#### **Consultant: Envisn, Incorporated, Bolton, MA. (May 2004 – Sep 2004)**

- Developed a framework for integrating new applications with the Cognos ReportNet Enterprise Business Intelligence (BI) product. The solution comprised Servlets, XML, XSLT, JavaScript, DHTML and the ReportNet Java SDK, for improved data exploration and integration with Cognos Connection, Report Studio and Query Studio.

**Principal Software Engineer: Brightline Technology, Incorporated, Rye, NH. (Apr 2003 – Mar 2004)**

- Architect for an enterprise-quality Java application server for IBM/Lotus Domino customers.
- The "Brightline Application Server - Enterprise Edition" allows customers to host existing J2EE applications in a Domino environment, scale Domino-based web applications through J2EE technologies, add Notes and Domino functionality to J2EE applications, add J2EE functionality to Notes and Domino applications, and use the Domino security model in J2EE applications.
- The server technology includes an extensible software backbone that provides all standard J2EE services to Domino, administration and deployment tools for managing J2EE servers and applications from either a Notes Admin client or web browser, and a fully transactional, enterprise-ready data store to complement NSF (Notes Storage Facility).

**Consultant: Confluent Photonics Corporation, Salem, NH. (Aug 2003 – Feb 2004)**

- Developed software for the Lightchip RAM-20-200-PSM/PSD Rack Mountable Intelligent 200 GHz DWDM Mux/Demux. The monitoring and control features include optical power detection, traffic-direction LEDs, visual alarms, and craft interface that provides access to the unit's identification data. The product is a bi-directional dense wavelength division multiplexor (DWDM) with power loss detection on the primary fiber that can trigger alarm LEDs and relays. Integrated power taps allow monitoring of incoming and outgoing signals in the primary fiber.

**Software Director, Optical Wavelength Management Group, Network Management Systems: Digital Lightwave, Incorporated, North Chelmsford, MA. (Oct 1999 – Apr 2003)**

**Manager, Software Quality & Infrastructure, Systems Engineering Group: Lightchip, Incorporated, Salem, NH. (Oct 1999 – Apr 2003)**

- Management: Hired and managed a team of six Quality Assurance Software Engineers, SNMP and TL1 software developers and Technical Writers. Coordinated efforts with Executive, Marketing, Sales, Manufacturing, Operations, Accounting, Human Resources, Optical Engineering and Systems Engineering teams.
- Engineering Infrastructure: Responsible for all software engineering hardware and software tool selection, purchasing, maintenance and support; development network configuration; obtaining engineering prototype hardware from the Optical, Systems and Manufacturing teams; communicating these needs to the company.
- Software Quality Assurance: Responsible for defining SQA needs, implementing a lab environment for testing multiple products, platforms and releases using a collection of highly configurable optical instruments, GPIB instruments and network interfaces. The SQA Lab was a showcase and was considered an essential stop when showing customers our product and engineering capabilities.
- Release Engineering: Responsible for all source code control, release engineering, builds and DCOs.

**Principal Software Engineer: Lightchip, Incorporated, Salem, NH. (Oct 1999 – Apr 2003)**

- Software architect for the Optical Wavelength Manager (OWM), utilizing StrongARM processors running VxWorks. The OWM monitors power, wavelength and signal-to-noise ratio for multiple channels on dense wavelength division multiplexed networks with programmable alarm thresholds and data logging. Configuration is done remotely or locally through a command line interface (telnet and RS232), SNMP, TL1 and/or Java based graphical user interface.
- Developed the Board Support Package for two StrongARM processor boards, using logic analyzers to debug assembler and "C" source code. Worked with technologists at Intel and Wind River to resolve problems encountered with early releases of silicon.
- Designed a comprehensive SNMPv1/v2c MIB for the OWM, including device traps, advanced row creation features, and integration with OEM customers' existing enterprise MIB trees. This MIB was advertised as "the world's first Optical MIB".
- Developed a Java GUI for the OWM; a patent application was filed for the GUI.
- Evaluated and selected real-time operating systems, prototype hardware systems and software development tools for bleeding-edge target (Intel StrongARM processor) hardware.

**Principal Software Engineer, Alcatel Internetworking, Voice Over IP: Alcatel Internetworking, Salem, NH. (Aug 1998 – Sep 1999)**

- Principal architect for a Voice over IP Gateway for the Enterprise market. The VoIP Gateway supported digital (T1/E1) and analog interfaces. A typical configuration would connect to one or more PBXs to the PSTN and to an enterprise network. Capabilities included fax relay, modem, voice and data.
- Integrated software components for the VoIP blade into existing Alcatel switches.
- Developed VoIP configuration interfaces for signaling, coding, network, dialing plan and hardware.

- Selected and purchased software development tools, telephony products and test equipment.
- Performed system and network administration for a Sun 450 Enterprise Server in the Salem, NH office. Installed and configured development tools and coordinated the build process with teams in Calabasas, CA.
- Coordinated development between teams in the U.S. and Alcatel headquarters in Colombes, France, building an IP-based PBX and other packetized voice products.
- Advised Network Management development team on Java design topics.

**Principal Software Engineer / Software Systems Architect: NBX Corporation , Andover, MA. (May 1997 – Jul 1998)**

- Designed the system software architecture for an Ethernet based telephone system (NBX 100) with high performance telephony, messaging, and computer integration via a single infrastructure. The NBX system provided a voice and data management platform merging packetized audio with an Ethernet LAN.
- Designed object-oriented architectures for Call Processing, Voice Mail, Automated Attendant, TAPI Service Provider, Web-based System Administration, and system services layers.
- Selected software tools and components for product development and deployment, including embedded real-time operating systems and object-oriented software development tools.
- Designed reliable messaging protocols for system controller and DSP-based telephony devices.
- Pioneered development from ObjecTime models to Windows NT (Microsoft Visual C++) simulation environment and Tornado/VxWorks (Cygnus GNU C++) target environment.
- Developed a Java-based telephone simulator that interfaced with the NBX100, to support development prior to availability of telephone set hardware.

**Technical Lead, Advanced Systems, New Technologies & Software Engineering Teams: Oxford Health Plans, Incorporated, Trumbull, CT. (Jun 1995 – Apr 1997)**

- Developed intranet and Internet applications and infrastructure including a "Back-End Server for Intranet Applications" that enabled access to Oracle enterprise databases from web-oriented technologies. The server was implemented in object-oriented Tcl ([incr Tcl]) with Oracle SQL\*Net client libraries and handled high-volume database transactions through pooled TCP/IP socket-based connections. The CGI client interfaces were implemented using Java, JavaScript, Perl5, Tcl, C, C++ and Korn Shell.
- Developed a secure Internet infrastructure for Electronic Commerce and Electronic Data Interchange systems utilizing technologies including routers, firewalls, demilitarized zones, Secure Socket Layer (SSL), authentication/certificates, Netscape Enterprise Server, VeriSign certificates, Checkpoint/Firewall-1 and Sun Netra Internet Servers. Built a message routing system based on asynchronous Remote Procedure Calls (RPC). Built CGI applications in Java, Perl5, Tcl, C, and C++.
- Developed software for Optical Character Recognition, Imaging Systems and Handwriting Recognition Systems.
- Provided trouble-shooting for system and network security, configuration and administration groups.

**Consultant: Quaker Farms Research, Southbury, CT. (Jun 1995 – Dec 1995)**

- Projects: Telephone Key System.
- Developed embedded system software.
- System and network security, configuration and administration; Internet, DNS & PPP configuration.

**Consultant: General DataComm Incorporated, Middlebury, CT. (Oct 1992 – Jun 1995)**

- Ported GDC network management applications from HP OpenView/SunOS to HP OpenView/HP-UX and IBM NetView for AIX. This required knowledge of BSD & SVR4 UNIX variants, multi-platform software development environments, SNMP, C++, X11 window managers, and system & network administration.
- Developed a tool for importing cross-product databases that enabled legacy systems to be managed by GDC's Megaview Network Management System.
- Created an extensible scripting language interface that enabled integration of third party network management protocols into GDC's Integrated Network Management Systems. This interface eliminated the need for Engineering to rebuild and redistribute system binaries to accommodate new protocols and reduced the frequency of software update releases.
- Developed a peer-to-peer network alarm-reporting interface for the INMS.

**Consultant: Data Switch Corporation , Shelton, CT. (Apr 1990 – May 1994)**

- Developed Element Management & Control Systems.

- Ported a real-time control system from PL/M to C for the SunOS Sun386I and SPARC platforms.
- Developed VT100 and IBM 3164 terminal emulators for SunView and the X11 Window System.
- Developed a Network Terminal Server interface for BSD sockets to network switches, user terminals and GUIs.
- Developed redundancy and fail-over systems for large and complex wide area networks.
- Developed graphical user interfaces for drag & drop port configuration and management.

**Consultant: IBM T.J. Watson Research Center, Eastview, NY. (Jul 1990 – Aug 1991)**

- Project: Servo Controller for a 12-Axis Robotics System; this was a "hard" real-time system.
- Designed the software architecture for the robotics system, a network of INMOS Transputers, with parallel processing and coordination for a 12-axis servo controller.
- Implemented network layer stack for distributing files and messages between Transputer nodes.
- Developed low level programming, command & data upload/download interface between host programming system and real-time robotics system. Developed GUI on host to access low level interface to control and monitor robotics system.

**Consultant: JANUS Systems, Incorporated, New York, NY. (Feb 1990 – Apr 1990)**

- Project: Total Integrated Graphics and Retrieval (TIGER) system for Ameritech Publishing, Inc. (now SBC Communications)

**Consultant: General DataComm Incorporated, Middlebury, CT. (Jul 1988 – Dec 1988)**

- Integrated Network Management System: Architecture design team. Developed an AT&T Accumaster Protocol compatible alarm-reporting interface for the INMS.
- NetView Alarm Reporting Interface: Developed and integrated an IBM SNA alarm reporting interface into a multiplexor control system. The interface passed multiplexor alarms to a NetView/PC management station, which passed alarms to a mainframe NetView system.

**Consultant: IBM T.J. Watson Research Center, Yorktown Heights, NY. (Aug 1987 – Jun 1988)**

- Projects: Robotic Fine Positioning Device. Communications System for Distributed Robotics. Digital Signal Processor Interface for Robotics.
- Developed all embedded software for these devices.

**Consultant: Telecom, Incorporated, Milford, CT. (Oct 1986 – Aug 1987)**

- Project: Point-Of-Sale System for Auto Parts Dealers.
- Migrated from NCR UNIX to SCO XENIX.

**Consultant: Pitney Bowes, Norwalk, CT. (Oct 1986 – Jan 1987)**

- Project: Manifest Mailing System.
- Developed a prototype system for recharging postage meters using EFT and DES hardware.

**Consultant: IBM T.J. Watson Research Center, Yorktown Heights, NY. (Jun 1985 – Sep 1986)**

- Project: General Purpose Automation Controller & Programming System.
- Developed download & debug for embedded system. Scheduler/Dispatcher for real-time system. Messaging for real-time & UNIX programming systems.

**Consultant: Digitech Industries, Incorporated, Ridgefield, CT. (Aug 1984 – Jul 1985)**

- Project: Network Protocol Analyzer.
- Developed an event programming language for the embedded real-time system.

**Consultant: Telecom, Incorporated, Milford, CT. (May 1984 – Nov 1984)**

- Project: Point-Of-Sale System for Auto Parts Dealers.

**Senior Software Engineer, Dictaphone Systems & Products Division: Dictaphone Corporation, Norwalk, CT. (Mar 1982 – Apr 1984)**

- Projects: Digital Voice Operating System. Dictation Control and Management System.

**Vice President, Consulting Services / Systems Programmer: InfoSoft Systems, Incorporated, Westport, CT. (Jul 1978 – Mar 1982)**

**Consultant: Control Process, Incorporated, Plantsville, CT. (Jul 1978 – Mar 1982)**

- Projects: Embedded process control systems.

**Consultant: Learning Unlimited, New Canaan, CT & Research Triangle Park, NC. (Jul 1978 – Mar 1982)**

- Project: Prescription-based Learning System.

**Consultant: Sales Maids of America division of GELCO, Southport, CT. (Jul 1978 – Mar 1982)**

- Projects: Payroll System. Point-Of-Sale Data Collection System.

**Consultant: PR Data Systems, Wilton, CT. (Jul 1978 – Mar 1982)**

- Projects: Press Release Distribution System. Mailing List Maintenance System.

**Consultant: Mnemonics Incorporated, Norwalk, CT. (Jul 1978 – Mar 1982)**

- Project: Market Tabulation System.

## **EDUCATION**

**Bachelor of Arts in Computer Science: Indiana University, College of Arts & Sciences, Bloomington, IN. (Sep 1975 – May 1978)**

## **PROFESSIONAL CERTIFICATION**

Sun Certified Java Developer (SCJD) • Sun Certified Java Programmer (SCJP)

## **PROFESSIONAL ASSOCIATIONS**

USENIX Association • SAGE (System Administrators Guild)

## **TECHNICAL SEMINARS**

Alcatel: SwitchExpert • Motorola: PowerPC 860 • Telogy Networks: Golden Gateway Software • Telenetworks: ISDN • Wind River Systems: VxWorks & Tornado • ObjecTime: Integration & Performance Tuning • USENIX: System & Network Security • ObjectWorld: Managing Object-Oriented Development Projects

## **HONORS AND AWARDS**

Cornell Society of Engineers "Ingenuity in Science and Mathematics Award," 1976.

## TECHNICAL SKILLS

- Programming Languages:** Java, C, C++, Perl, Tcl/Tk, Expect, JavaScript/ECMAScript, Gnu bison, Gnu flex, yacc & lex, assembly languages.
- Professional Certification:** Sun Certified Java Developer (SCJD), Sun Certified Java Programmer (SCJP).
- Operating Systems:** Red Hat Enterprise Linux, SuSE Linux, Sun Solaris, Enea OSE, FreeBSD, IBM AIX, HP HP-UX, Wind River VxWorks, Microsoft Windows.
- Database Engines:** MySQL, PostgreSQL, Microsoft SQL Server, Hypersonic SQL, Oracle, IBM Informix, IBM DB2.
- Microprocessors:** Intel StrongARM, Intel x86, Freescale MPC8548, Freescale MPC7410, Freescale MPC860, Freescale MC680X0, Sun SPARC, Zilog 80180.
- Network Management:** SNMP MIB design & agent development, SNMP verification, HP OpenView, IBM Tivoli NetView.
- Network Routing:** Cisco IOS, Juniper JunOS, Link Aggregation Control Protocol (LACP) (802.3ad), Bidirectional Forwarding Detection (BFD).
- Network Protocols:** Voice over IP (VoIP), Media Gateway Control Protocol (MGCP), Network-Based Call Signaling (NCS), Session Initiation Protocol (SIP), Signaling System #7 (SS7), Simple Network Management Protocol (SNMP), TCP/IP, UDP/IP, Socket Programming, Point-to-Point Protocol (PPP), ISDN Q.921/LAPD, ISDN Q.931/Call Control, High-level Data Link Control (HDLC), IEEE 802.2 Logical Link Control (LLC), IEEE 802.3 CSMA/CD (Ethernet), Secure Sockets Layer (SSL) & OpenSSL, Secure Shell (SSH) & OpenSSH, Simple Mail Transfer Protocol (SMTP), Internet Message Access Protocol (IMAP), Simple Network Time Protocol (SNTP), X11 Window System, Domain Name System (DNS), Network Information Service (NIS), Lightweight Directory Access Protocol (LDAPv3), Dynamic Host Configuration Protocol (DHCP).
- Java Technologies:** Apache Ant, Eclipse, Standard Widget Toolkit (SWT/JFace), Hibernate, XDoclet, Apache Log4j, Java Management Extensions (JMX), Java Service Wrapper (JSW).
- Java Web Services:** JBoss, Apache Tomcat, Java Servlets, Java Server Pages (JSP), Java Server Pages Standard Tag Library (JSTL), Java API for XML Processing (JAXP).
- Web Services & Content:** HyperText Markup Language (HTML), Cascading Style Sheets (CSS), Java Applets, HyperText Transfer Protocol (HTTP), Web Services Description Language (WSDL), Simple Object Access Protocol (SOAP), Apache Axis, Apache HTTPD, Apache Struts, JavaServer Faces (JSF).
- Web Performance & QA:** JUnit, HttpUnit, Apache JMeter, Apache Cactus, ECPerf, JUnitEE, TagUnit, Apache Watchdog.
- XML Technologies:** Document Object Model (DOM), Simple API for XML (SAX), Extensible Markup Language (XML), Extensible HyperText Markup Language (XHTML), XML Schema, XML Path Language (XPath), XML Pointer language (XPointer), XML Linking Language (XLink), Extensible Stylesheet Language (XSL), XSL Transformations (XSLT), XSL Formatting Objects (XSL-FO), Apache Xalan XSLT processor, Apache Xerces parser, Saxon XSLT processor.
- Java 2 Standard Edition:** Java Naming and Directory Interface (JNDI), Java Database Connectivity (JDBC), Java Authentication & Authorization Service (JAAS), Java Cryptography Extension (JCE), Java Foundation Classes (JFC/Swing), Java IDL, Java Remote Method Invocation (RMI), JavaBeans Activation Framework (JAF), JavaBeans Component API, Abstract Window Toolkit (AWT).
- Java 2 Enterprise Edition:** Enterprise JavaBeans (EJB), J2EE Connector Architecture (JCA), Java Message Service (JMS), Java RMI over IIOP (RMI-IIOP), Java Transaction API (JTA), Java Transaction Service (JTS), JavaMail, OMG Object Transaction Service (OTS).
- Object-Oriented Tools:** IBM Rational Rose RealTime, Real-time Object-Oriented Modeling (ROOM).
- Release Engineering:** IBM Rational ClearCase, Concurrent Versions System (CVS), Microsoft Visual SourceSafe.
- Defect Tracking:** IBM Rational ClearQuest, Bugzilla, Jira Issue Management, Jive Forums.
- Other Tools:** Adobe FrameMaker, DejaGnu, ZeroG InstallAnywhere, IBM Lotus Domino & Notes, Cognos ReportNet.
- Other Languages:** PostScript, PL/M, FORTRAN, COBOL, PL/1, Pascal, LISP, BASIC.