
SOFTWARE DESIGN • SOFTWARE MANAGEMENT • PROJECT MANAGEMENT

*Real-time Embedded Systems • GUIs • Client/Server • Database
Medical Imaging • Industrial Controls • Healthcare • Document Management*

Professional software developer successful in the design and development of complex software applications and systems. Thirty years of diverse software experience in a wide variety of applications from plant control systems to state-of-the-art CT scanners. Fifteen years experience managing software development personnel and projects. Proven ability to bring cutting-edge development technologies and tools to the table and speed up development, reduce turn around time, and significantly improve the quality of products. Experienced in all phases of software from design, coding and debug to large-scale software architecture, project and staff management.

SKILLS INVENTORY

Languages	C, C++; Microsoft VB (5.0, 6.0 .NET), C# (1.1, 2.0,3.5), C++ .NET (managed C++); Java; XML; CSH and SH UNIX shell scripts; PLM, Assembler (Arm, PowerPC, 808x6, 680x, 680x0, 8051); FORTRAN
Operating Systems	Windows 95/98/NT/2000/XP; UNIX (14 years experience); OSE; ThreadX; VxWorks; MS-DOS; pSOS/pSOS+; RSX-11M; SPOX for 21060 DSP
Software Modeling	OO modeling using UML, Rhapsody 3.1, 4.0.
Configuration Management	MS SourceSafe; Intersolv PVCS; UNIX RCS, SCCS, make; dmake; nmake; Opus make; MKS toolkit
GUI Development	MS Visual Studio (5.0, 6.0, .NET 2003, 2005, 2008); UNIX: X Windows, OpenLook, XView, SunView (Sun)
Databases	Sybase ASE, Microsoft Access; SQL Server 2000, 2005; MS Visual Basic (DAO, RDO, ADO), ADO.NET; Crystal Reports; C-TREE for DOS and UNIX; INFORMIX C-ISAM; MySQL
Hardware	Motorola: PowerPC 860, 740; 680x, 680x0; Analog Devices 21060 DSP; Intel ARM, 80x86; Sun: 3/xxx, 4/xxx, SparcStation; Unisys 6000/75; Masscomp; Silicon Graphics
Networking	TCP/IP, TLI, Sockets, FTP
Miscellaneous	MS Office, Word, Excel (97, 2000, XP, 2003); MS Project; Lotus 123; Borland QuattroPro; WordPerfect for DOS and Windows; VBA, DOORS

PROFESSIONAL EXPERIENCE

Software and Systems Consultant**1992 - present**

Served in a wide range of roles and responsibilities while a software and system engineering consultant including software manager, project manager, technical director, senior analyst, and senior designer. Some of my select accomplishments during that time:

CardioInsight Technologies, Inc., Cleveland, Ohio (Consultant)**2007 - present**

As software development manager for a start-up medical imaging company, responsible for all software development activities including development of near and long-term software project plans and for building a staff of software developers. Designed and architected software for prototype proof-of-concept software application used for clinical pilot studies and wrote the majority of software. Responsible for hardware and software platform as well as the selection of development methodology and tools.

Technologies used: MS Visual Studio 2005/2008, C# .NET (2.0, 3.5), XML, OpenInventor 3-D toolkit.

Nautilus Consulting Group, Inc., Westlake, Ohio (Consultant)**2006 - 2007**

As sub-contractor to a large communications company, participated in the development of a large-scale database system used for configuration of telecommunications equipment. Responsibilities included modification and testing of a C++ database interface, writing SQL stored procedures and development of embedded Java code. *Technologies used: Sybase ASE, Linux, C++, Java.*

Philips Medical Systems, Highland Heights, Ohio (Consultant)**2005 - 2006**

As senior software consultant, developed software for physician's workstation used for viewing and analyzing PET and CT images. Effort included development of a windows GUI application and integration with extensive .NET component library for medical imaging as well as development of new components specific to PET imaging. *Technologies used: MS C# .NET (1.1 & 2.0), XML.*

Northrop Grumman Information Technology, Brookpark, Ohio (Consultant)**2003 - 2005**

As contract software developer for NASA, designed and developed embedded software for experiments rack on International Space Station. Software developed included communications interface between space station and earth and collection of telemetry data from experiments. Activities included authoring communication protocols, software design, coding, debug, testing and writing test documentation. *Technologies used: C++, MS C# .NET (1.1), VxWorks RTOS, TCP/IP UNIX.*

Diebold, Inc., North Canton, Ohio (Consultant)**2002 - 2004**

Lead architect in object-oriented software development project for embedded ARM processor used in cash dispenser module for new line of ATMs. Developed software for exception handling, event logging, and event pool management. Developed and debugged low-level code for communication and control in embedded 8051 controller chip. Designed, developed, implemented and tested high-level software architecture for fault-tolerant operation of all subsystems including stepper motors, transport, sensors and indicators. *Technologies used: Rhapsody 4.0 for UML, Green Hills C/C++ for ARM processor, Visual C++.NET, ThreadX RTOS, PLM, 8051 assembler, MS Windows.*

Multi-Dimensional Imaging, Solon, Ohio (Consultant) 1999 - 2002

Led the design effort for a large object-oriented software development project for embedded processors controlling a new state-of-the-art medical imaging system. Built and managed a team of 8 engineers. Responsibilities included high-level system and software design, object modeling, coding, test and debug. Selected software tools and embedded real-time operating system for use on project. Introduced state-of-the-art software design tools for object-oriented analysis and design. *Technologies used: Rhapsody 4.0 for UML, Green Hills C/C++, Visual Basic, Visual C++, MySQL, OSE RTOS, Linux, MS Windows, PowerPC 860, 740.*

Tele-Document, Inc., Cincinnati, Ohio (Consultant) 1998 - 1999

Served as Technical Director for company involved in document automation for home healthcare. Responsible for high-level technical strategy with oversight of development, installation and support activities. Provided technical support to sales and marketing and negotiated customer interface specifications. Developed and maintained software for home healthcare documentation system. *Technologies used: Visual Basic, MS SQL 6.5/7.0, DAO, and RDO, MS Windows NT/9x.*

Marconi Medical System (now Philips), Highland Heights, Ohio (Consultant) 1996 - 1998

Led team of four engineers in the development of ultra-fast front-end image processing system for Computed Tomography (CT) Scanner. Designed framework for communication and DMA interface between DSP and Host processor. *Technologies used: C, C++, 21060 assembler, SPOX DSP OS/21060 DSP, pSOS RTOS/PowerPC.*

J. W. Harley, Inc., Twinsburg, Ohio (Consultant) 1994 - 1996

Lead designer and project manager for data collection system used for monitoring and diagnosing high voltage transformers in the power industry. Responsible for high-level and detailed design as well as managing team of developers. Developed custom EHV transformer monitoring and analysis package. Developed and maintained software configuration management system. *Technologies used: C, Visual Basic, TCP/IP sockets, SCO UNIX, pSOS-386, MS Windows 3.1, device drivers.*

Sterling Jewelers, Akron, Ohio (Consultant) 1993 - 1994

Led a team of three analysts in development of a credit authorization system that interfaced over 1000 retail stores to the central business office. Developed high-level software architecture and design and participated in the development of over 30,000 lines of C code. *Technologies used: C, TCP/IP Sockets, TLI, C-ISAM, UNIX, Unisys 6000/75, Hayes modem control*

While a Software Consultant, other clients included:

- 4TechWork, Akron, Ohio
- Telxon Corporation, Akron, Ohio
- Plexar Associates, Solon, Ohio
- Trionix Research Laboratory, Twinsburg, Ohio
- Elgin Furniture, Cleveland, Ohio
- G. E. Medical Systems, Milwaukee, Wisconsin
- Jones Day, Cleveland, Ohio
- Inrtek, Twinsburg, Ohio

PREVIOUS EMPLOYMENT**Reality Imaging, Solon, Ohio****1989 – 1992****Project Manager, Product Manager**

- As Product Manager, responsible for directing development of software and features for high-speed 3-D image processor.
- As project manager, led a team of four engineers in the development of software for a state-of-the-art imaging subsystem to a major OEM supplier of medical imaging equipment.
- Designed and implemented 3-D imaging software that ran on proprietary window system in embedded 68020 processor. Over 100,000 lines of 'C' code developed for an embedded 68020 and custom 3-D array processor. Developed UNIX device drivers for custom instrument interface. Responsible for UNIX system administration and software configuration management.

Allen-Bradley Company, Highland Heights, Ohio**1986, 1988 – 1989****Senior Systems Engineer, Project Manager (Consultant)**

- As project leader, developed software for embedded real-time processor used for data collection and remote database in a process control system.
- Designed and developed software using 'C' and CEXEC real-time kernel. Duties included coding, high-level design, resource planning and scheduling.
- Designed and implemented graphics driver software and diagnostics for a 68000 based remote user workstation. Software written in 'C' and assembler developed on Masscomp computer running UNIX.

SBI Corporation, Richmond Heights, Ohio**1987 – 1988****Design Project Coordinator**

- Managed the design effort for a custom drawing and document display system running on Sun workstations. System enabled users to quickly retrieve documents and drawings using networked workstations throughout an assembly plant. Responsible for setting up network at key customer site with over 35 workstations and servers.
- Designed and developed software in 'C' and SunView windows programming environment. Designed database software and image data compression methods for storing digitized engineering drawings. Developed coding guidelines and established software configuration management system.

Trionix Research Laboratory, Twinsburg, Ohio**1986 – 1987****Manager of Software Development**

- Led development of state-of-the-art nuclear medicine camera system. Responsibility for specifying computer system, establishing software development guidelines and developing windows-based imaging software.
- Responsibility for UNIX system administration and networking. Developed configuration management system and guidelines for development of all software.

Technicare Corporation, Solon, Ohio
Senior Software Engineer

1980 – 1985

- Designed and developed software for intelligent motor controller used to position a gamma camera for nuclear medicine. Motion control software written in 'C' for 68000, developed on a PDP-11 cross compiler.
 - Developed software in assembler for Motorola 6802 processor used in television camera control subsystem and for capturing images from a digital radiography system and storing to disk for analysis.
 - Developed software in Macro-11 for PDP-11/23 that drove an image display and analysis system running under RSX-11M. Implemented software for rejection of irregular heartbeat data in the collection of gated cardiac studies.
 - Designed and implemented software for a Winchester disk subsystem used in nuclear medicine computer system.
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EDUCATION**Worcester Polytechnic Institute, Worcester, Massachusetts****B.S. Electrical Engineering, 1978**

Member Eta Kappa Nu - Electrical Engineering Honor Society