

John Irwin

Software Engineer / Technical Lead

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SUMMARY

Innovative and versatile engineer with expertise in software architecture and design, systems engineering, and technical leadership.

- Broad technical knowledge of hardware/software platforms, languages, and technologies
- The ability to rapidly comprehend customer requirements and create effective solutions
- Experienced in the full software development lifecycle, from concept to delivery
- Sprint planning and iterative development in an Agile/Scrum environment
- Strong communication and interpersonal skills
- Experience with design controls: FDA 21CFR part 820 QSR, IEC 60601-1 standards, ISO standards

PROFESSIONAL EXPERIENCE

Saab Inc., East Syracuse, NY

2017 – present

Senior Software Engineer – TFDM

2020 – present

Senior systems engineer responsible for product requirements, architecture and design of Surface Management software in support of the FAA's Terminal Flight Data Manager (TFDM) program. TFDM is a multi-year program that aims to modernize ATC Towers in the U.S. by deploying a combination of Electronic Flight Strips and Surface Management capabilities. Working with the customer (FAA stakeholders) to analyze use cases, define and refine requirements, and develop the system design. Technologies: Rhapsody, Jira, Confluence, Visio, Excel, PowerPoint, Git, Linux.

Senior Software Engineer – TFDM

2017 – 2019

Senior developer responsible for developing Surface Management software in support of the FAA's Terminal Flight Data Manager (TFDM) program. Duties include analysis, software design, and implementation in an Agile/Scrum methodology. Technologies: Java, Swing, Git, OSGI, Red Hat Linux, Mockito, BitBucket, Bamboo, Jira, Confluence.

Responsible for:

- Design and implementation of algorithms
- Client user interface
- Development of automated unit tests
- Authoring wiki-pages within a developer knowledge base

The CBORD Group, Inc., Ithaca, NY

2016 – 2017

Senior Software Engineer – Clinical Team

2016 – 2017

Full-stack developer responsible for the design and implementation of CBORD's Net Nutrition Service Suite, a suite of software as a service (SaaS) web applications used to manage food services in a hospital setting. The NetNSS solution supports: menu planning, meal selections, tray tracking, and patient nutrition. The solution interfaces with hospital admit-discharge-transfer (ADT) and diet order systems, and integrates industry standard nutrition databases, to allow

accurate reporting of patient nutrition, and allow user to be alerted when meal selections do not comply with a patient's diet orders or food allergies. The following technologies were used within an Agile/Scrum methodology: ASP.NET/MVC, C#, HTML5, CSS, JavaScript, TypeScript, jQuery, Kendo UI, SQL Server, and Rally. Responsible for:

- Design and implementation of multi-tier web application features
- Development of automated unit tests (used in continuous integration builds)
- Authoring wiki-pages within a developer knowledgebase
- Participate in agile backlog grooming and sprint planning

Welch Allyn Inc., Skaneateles, NY

2006 – 2015

Lead Software Engineer – Software Architecture, R & D

2011 – 2015

Co-architect of the Connex Clinical Surveillance system. This product allows clinicians to centrally monitor patients on a medical/surgical hospital floor by combining real-time continuous patient monitoring with episodic spot-check vitals in a single unified presentation. Connex is a service-oriented architecture (SOA) using the Microsoft technology stack, including: .NET, C#, WPF, WCF, MEF, and SQL Server. Responsible for:

- Software architecture definition and documentation
- Apply architecture tradeoff analysis method (ATAM) to evaluate architecture alternatives
- Design of system interfaces, including device to system interface
- Creation of proof-of-concept/prototype software, and formal design guidance
- Safety classification of product and software modules (per IEC 62304)
- Insuring that designs are compliant with FDA and international regulations
- Key participant in: project requirements development, failure mode analysis, risk analysis, and change control board reviews
- Mentoring development team members

Software architect and requirements analyst for Cardio-Pulmonary Workstation product (resting ECG and spirometry testing), and software architect for sustaining effort on the Welch Allyn Service Software Suite. Responsible for:

- Development of software requirements specifications
- Definition of EMR application programming interface (API)
- Developed a framework to perform Behavior Driven Development (BDD) testing of Service Tool components, using SpecFlow, with scenarios described in Gherkin, which supports automation of the plug-in unit testing.

Senior Software Engineer – Project Manager/Architect, R & D

2006 – 2010

Software architect and contributor for the Connex platform and Connex Electronic Vital Documentation System. This products allows patient vitals data to be wirelessly delivered from bedside medical devices directly into the patient record in a hospital's Electronic Medical Record (EMR). Connex is a service-oriented architecture (SOA) using the Microsoft technology stack, including: .NET, C#, WPF, WCF, MEF, and SQL Server. Responsible for:

- Software architecture definition and documentation
- Design of system interfaces, including device to system interface
- Creation of proof-of-concept software and formal design guidance
- Insuring that designs are compliant with FDA and international regulations
- Development of coding standards, conducting design and code reviews

- Key participant in: project requirements development, failure mode analysis, risk analysis, and change control board reviews
- Key influencer for: the adoption of agile/scrum development methodology, automated nightly builds, and automated testing
- Mentoring development team members

Project manager, architect, and contributor to Welch Allyn Enterprise Integration Engine, a product which provides HL7 integration between Welch Allyn solutions and electronic medical record systems (EMR). Responsible for:

- Architecture definition and documentation
- Project scheduling and resource planning
- Periodic progress and status reviews with product stakeholders
- Contributor to product and test software

Zco Corporation, Hudson, NH

2004 – 2005

Project Manager/Designer, Commercial Software Division

Project manager for various complex software development projects for the aerospace, medical, and financial services industries. Languages and tools used include MS Word, Visio, MS Project, C#/.NET, VB, and C++. Responsible for:

- Interfacing with clients to determine project requirements and scope
- Writing technical proposals, design specifications, prototypes, UI wireframes
- Tracking and reporting project status
- Developing and enforcing coding standards

nVidia Corporation, Inc., Santa Clara, CA

2001 – 2002

Architecture Group

Designer/programmer for simulation and testing of 3D graphics chip designs. Coding done in C/C++, MFC, XML, Perl. Accomplishments include:

- Designed and implemented an object-oriented test environment used for verification of the display engine. This environment facilitated the creation of randomized tests yielding greater test coverage.
- Designed and implemented a GUI interface and communication layer for a DX8 DDI/DP2 tracing utility using MFC and DCOM, allowing remote configuration and control of the tracing utility while running full-screen 3D applications.
- Instrumented the DX8 reference rasterizer to capture the primitive graphics data of applications and benchmarks for replay against hardware simulators for functionality and performance testing.
- Created object-oriented XML parser for data sets which were too large to fit in memory all at once.
- Wrote and modified Perl scripts to run automated tests and create reports.

3Dfx Interactive, Inc., San Jose, CA

1998 – 2000

Senior Staff Engineer, Hardware Engineering

Key designer/programmer for performance simulation of 3D graphics chip designs. Coding done in C/C++. Accomplishments include:

- Designed and implemented routines for a DX8 graphics driver to translated pixel shader byte code into the hardware instructions required to setup the hardware’s texture pipeline stages.
- Implemented several performance enhancements to the scan conversion section of the C-model simulation of new 3D graphics hardware, increasing the efficiency of the graphics pipeline.
- Designed and implemented a data flow analysis class library which was used to create performance simulations and data analysis tools.
- Implemented several diagnostic and benchmark programs.
- Ran performance tests and analyzed and presented results.

Progress Software Corporation, Bedford, MA

1992 – 1998

Senior Software Engineer, Database Engineering, Nashua, NH

1997 – 1998

Team leader/designer/programmer for new database products. Coding was done in Java, and C/C++; Project tracking performed with MS Project; Presentations created with MS Power Point.

- Team leader/contributor on product that performs brokering and database server functions for SQL and 4GL database client applications.
- Member (and later leader) of a team implementing a prototype of an OODB/Relational database system based on Java object model.

Senior Software Engineer, Crescent Division, Nashua, NH

1995 – 1997

Designer/programmer on several Visual Basic Add-On products. Coding was done in C++ and Smalltalk.

- Implemented OLE objects/controls to support a variety of functions including: array operations, NT security management, and customizable data control.
- Contributed to Visual Basic compiler.
- Created a comprehensive test suite to test the correctness of a Visual Basic compiler.

Senior Software Engineer, Technology Group, Nashua, NH

1993 – 1994

Key designer/programmer for database client/server product. All coding was done in C.

- Modified 4GL database Windows client to operate with AS/400 database server.
- Implemented enhancements and bug fixes to AS/400 database server.
- Assisted in the implementation of ODBC interface for HP-3000.

EDUCATION

Bachelor’s Degree in Computer Science, State University College at Oswego, Oswego, New York

SKILLS

Java, C#, C/C++, JavaScript, TypeScript, Visual BASIC, Perl, assembler, Smalltalk

SQL Server, PostgreSQL, BrightstarDB, SQL Anywhere, DAO, ODBC, Progress 4GL

HTML, CSS, JSON, XML, XAML

.NET, ASP.NET/MVC, jQuery, REST, LINQ, Kendo UI,
WPF, WCF, WF, MEF, Swing, DirectX/D3D, OpenGL,
MFC, ATL, COM/DCOM, ActiveX, X-Windows,
Windows Forms, HL7, FHIR

Agile, Scrum, BDD, SpecFlow, Gherkin

Design Patterns, SOA, MVC, MVVM, UML

Visual Studio, Team Foundation Server (TFS), Azure,
Git, Perforce, SourceSafe, PowerShell

Jira, Confluence, Crucible, Rally, MS Project,
Microsoft Office Suite (SharePoint, Outlook, Word,
Excel, PowerPoint, Visio)

Windows, Android, Linux, VAX/VMS