

**Keith B.**

**SUMMARY**

Experienced senior software and verification engineer participating in multiple market segments spanning projects including consumer products, machine vision defect detection, manufacturing traceability, FAA, FDA and, FRA regulatory projects.

**PROFESSIONAL EXPERIENCE**

**First Consulting Inc. 2012 to Present**

*Senior Software Engineer*

*For client Alstom Signaling 04/21 – 10/21*

FRA-regulated project with a team in Rochester, NY, and Toronto Ontario. Enhanced software features supporting Automatic Train Control, ATC functions as part of the Advanced Civil Speed Enforcement System used by New York MTA and New Jersey Transit.

* Linux embedded development tasks focused on improving the reliability of data sent to train crash recorder and operator departure tests. Investigated unplanned reset issues of a DSP based ethernet controller in the system.
* Contributed to the automated data analysis of operational train log data, CSV and text files. Provided technical mentoring in the form of methodology and examples to team members. Developed pilot code and modules to perform data reduction and post reduction analytics utilizing Python Pandas.
* Supported Alstom Data Analytics team. The team required updates of SQL Server views. This eliminated the need to seek a separate contractor. Created linux based SQL Server development server, a virtual machine for pre-deployment testing and for use in future work.
* Software engineering liason to Alstom Engineers at New Jersey Transit solving or escalating issues that prevented or limited operation of trains. Perfomed post mortum software analysis of hardware returned to Alstom.
* Technical liaison to team in Bagalore India. This team was porting an existing C# WPF application. Provided technical analysis of issues and provided testing when required.

*For client Ortho Clinical Diagnostics 01/21 – 03/21*

Provided feasibility analysis on a team of two consultants. In consideration of product planning, provided a preliminary analysis of existing middleware and medical instrument control software.

*For client Alstom Signaling 03/20 – 12/20*

FRA-regulated project within a team in Rochester, NY and Toronto, Ontario. Delivered software features supporting Automatic Train Control, ATC functions as part of the Advanced Civil Speed Enforcement System used by New York MTA and New Jersey Transit passenger service. This effort involved working with hardware and embedded engineers in a hardware lab environment and supporting on-locomotive testing. Contributions were as follows:

* Designated to incorporate performance improvements to the automatic braking logic within the Automatic Train control embedded system. This effort included restructuring an MFC legacy application incorporating logic from a newer C# application. This change resulted in new configuration data in support of this functionality. This change in configuration data resulted in the need to modify the source code on the embedded system. This was conducted as a per development activity. Upon completion of software changes, extensive testing was conducted on the ATC embedded system in operational configurations.
* NJT and M8 ATC embedded systems required extensive configuration data. In coordination with the embedded software team, added new functionality to software tools that generated configuration data used on ATC embedded systems.

 *10/18 – 03/20*

FRA-regulated project. Software lead of a PC tools team supporting embedded hardware for an Automated Train Control, ATC for the Massachusetts Bay Transportation Authority, and the MTA Staten Island Railway. This team delivered software tools that are used to and generate safety-critical data structures and additionally to update, configure and monitor the ATC system. Completed this project and moved to support the M8/NJT project.

As lead, responsibilities were as follows:

* Developed software impact analysis and requirements development.
* Worked with the management team to establish schedule baselines.
* Coordinated software releases and individual resource plans.
* Coordinated peer software, validation, and safety-critical reviews.
* Fulfilled relevant product and regulatory requirements.
* Championed the development of new software simulation tools to improve turnaround time.

As individual team contributor, efforts were as follows:

* Part of a tiger team of hardware, safety, and software engineers charged to improve automatic braking performance in the ATC embedded system. Efforts involved log analysis, software refactoring, and conducting extensive integration testing with the embedded system.
* Contributed to SOAP-based WPF application used to maintain the embedded hardware.

*For client Ortho Clinical Diagnostics 09/17 – 08/18*

As part of a two-member team consisting of a developer and research scientist, developed concept applications in the consideration of future product offerings. Responsibilities included:

* Developed prototypical C# based WPF application. This application was used as a demonstration vehicle and was presented to internal marketing and management teams.
* Developed a validation of function strategy based on static models under the guidance of the research scientist. Once confirmed this date was converted by a custom tool to unit tests.
* Worked with designers to develop user interface wireframes for future product offerings.

*For client Baxter Hospital Care 08/16 – 09/17*

Member of the Spectrum IQ Infusion pump product team within an FDA-regulated environment. Part of a seven-member sub-team split between Chicago, Illinois and Medina, NY. This team was responsible for delivering a new Windows application implemented in WPF. This application, Dose IQ Safety Software, was created to support patient safety through the generation of drug libraries to provide specific lists of drugs and dosage information on a per pump basis. Responsibilities included:

* Developed software features to reduce data entry repetition as well as features that tailored data validation based on the type of drugs selected.
* Contributed to multi-developer efforts in support of larger components or features.
* Devised strategies to incorporate legacy applications to eliminate code rewrite.
* Conducted and participated in code reviews and document reviews.

*For client Biotricity 09/17 – 03/18*

Verification and requirements engineering within an FDA-regulated environment. Part of a team with members in Toronto, Rochester, NY, California, Texas, and Uruguay. Specific contributions included:

* Developed test plans, test cases, and test case coverage for an LTE Mobile Cardiac Telemetry (MCT) system.
* Developed software utilities to automate requirements to test case coverage.
* Authored screen wireframes and requirements for patient and physician web portals.

*For client Ultra Electronics, Flightline Systems 05/12 – 08/16*

FAA D0178 C software project. Participated in software and hardware verification. Developed software requirements, work instructions, and detailed technical specifications. This project supported the qualification of a product used to monitor the operation of aircraft turbine engines for several helicopters and fixed-wing aircraft types. Specific contributions included:

* For multiple aircraft types and based on aircraft operational requirements – developed requirements, test cases, test procedures and test case and requirements tracing.
* Authored test procedures to validate the pilot graphical instrument display. These tests produced operational scenarios to verify compliance with aircraft operational requirements.
* Authored system tests using signal injection at the external sensor input sources. These tests verified the full engine monitoring system would perform to aircraft operational requirements.
* Participated in design reviews and verified the results of testing and requirements tracing.

*For client Kodak Alaris*

* Conducted software security compliance audits and audits of software suppliers.

*For client ACM Labs*

* Developed an ASP.NET Web Forms component to support data warehouse extracts.

**Eastman Kodak 1998 to 2012**

*Software Engineer*

*Kodak ShareButton Application 2009 to 2012*

Part of a large development team split between Rochester, NY and Shanghai China. This team was responsible for the development and maintenance of a share Macintosh and Windows application designed for simple and straightforward use. This application was deployed in multiple languages. Specific contributions included:

* Translated marketing requirements into software requirements.
* Developed and/or coordinated the development of software features specific to the Microsoft Windows operating system. These features were implemented with C++ and Python.
* Engaged in pre-product planning with marketing and product engineering teams.

*Kodak proprietary cloud commercialization project 2010*

Python developer part of a large team in the United States and China. Implemented desktop local RESTful APIs to interface with Kodak desktop applications.

*Release Engineering 2007-2009*

Three-member team charged with the management, build, and release of exceptionally large codebases for the camera and inkjet business units.

* Provided software configuration management to US and offshore teams.
* Managed the release of software to Kodak customer web portals.
* Coordinated and placed software deliveries from external vendors into software version control.
* Developed a distributed continuous integration server to remotely manage builds and provide access to build outputs to the worldwide development team.

*Kodak EasyShare Software 2001 to 2007*

Part of a US and Shanghai China team. Individual contributor as well as a principal owning the development and design of features in Kodak EasyShare software. EasyShare, an important component for paper and online printing revenue was utilized by several Kodak business units and used by millions of worldwide customers. Specific contributions included:

* Developed features in EasyShare such as:
	+ Automatic transfer. This feature was updated frequently upon the release of new camera product lines. This feature was designed to automatically transfer pictures when a Kodak camera was connected to the PC.
	+ Features to provide automatic behaviors based on metadata on the camera.
	+ Provided specialized behaviors when a Kodak Picture PC was present.
	+ User and product tips.
	+ Application update testing.
	+ In application slide show presentation feature.
	+ Customized product installers with Kodak branded user interfaces.

*Kodak Digital Science 1998-2001*

Development and support activities related to windows device drivers for the Kodak Professional DSLR product family.

**Interwave Technology 1997-1998**

*Software Engineer*

* Consultant implementing Manufacturing Execution Systems based on Visual Basic, Wonderware Intrack MES and Oracle.

**Ross Microsystems 1996-1997**

*Software Engineer*

* Developer of an embedded machine vision system designed to detect glass and print label defects in medical test tubes. This effort included extensive experimentation with lighting solutions and the iterative development of defect detection schemes.

**SONY Display Device 1995-1996**

*PC Administrator*

* Sony television aperture grille manufacturing. Managed the development of manufacturing data collection and production reporting. Maintained and extended in-production and post-production automated inspection systems.

**TECHNICAL SKILLS**

**Technologies:** C++, Visual C++, C#, ASP.NET, Visual Basic, Python, SQL Server, VBA

**Team Developer:** Small and large development teams across multiple market segments.

**Team Lead:** Small development team focused on deliverables for an FRA project.

**Verification Engineering:** Test case, test procedure and traceability for FAA and FDA projects.

**Requirements Development:** General software, FDA and FAA projects.

**Civil Engineering:** Bridge, roadway, infrastructure and commercial design project execution.

*Professional Training and Presentations:*

* Accessing Data with .NET Framework 4 (MTSC 70-516)
* Windows Communication Foundation (MTSC 70-503)
* Web Application Development with .NET Framework 4 (MTSC 70-515)
* Presentations to Rochester development groups including new technologies

and techniques.

**EDUCATION**

**Master of Science in Earth Science**, California University of Pennsylvania

**Bachelor of Science in Applied Computer Science**, California University of Pennsylvania