Piyush Mohabansi

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Decisive, action-oriented and result focused software developer with strong technical and business analysis skills seeking a challenging position that will utilize my diverse software development and leadership expertise to help accomplish the mission and provided me the opportunity for growth and advancement.

Summary:

- 17+ years of experience in software development.
- Adept at overseeing all facets of project lifecycle, including initiation and planning, defining requirements and project deliverables, developing project plans (scopes, timelines and delivery dates), risk assessment, sprint planning, retrospective analysis, FDA submission compliance, product launch and post launch support.
- Outstanding talent in planning and prioritizing multiple projects, resource loading, tracking development milestones, team building, process optimization, process automation and quality improvement. This include hands on code writing as well.
- Successful track record of developing commercially viable medical device or industrial device software products from concept through to commercialization.
- Expert in Scrum Agile and waterfall Project execution methodologies.
- Excellent Analytic, communication, organizational and interpersonal skills.
- Major strengths in leadership, planning and problem solving.
- Fully knowledgeable of current U.S. and OUS FDA regulatory requirements and Industry Standards.
- Expert in IDE, PMA, 510(k)'s and CE submission strategies.
- Highly skilled in working with big or small group / individual contributor / multi-site working or coordination with employees and outsourced contractors.
- Played various roles and responsibilities for Software Engineer / Requirement Writer / Analyst, Technical Solution Architect, Project / Team Manager and System Administrator. Worked on various different hardware platforms and operating system environments using cutting edge tools & technology. Demonstrated expertise in the following domains - Finance, Healthcare in developing class II/III medical devices, and Banking.

Technical Skills:

Languages

Swift, Objective – C, C/C++, QT, .NET Framework 2.0/3.0/3.5/4.0/4.5/4.5.1 with C#.NET, VB.NET, VC++, Visual Basic 6.0 (VB 6.0), PowerBuilder, PL/SQL, ASP .NET, Java & Swing (Java), Java with RMI, JDBC, Servlets, EJB.

HTML 5, XHTML, DHTML, CSS3, ASP, JSP, XML, JavaScript, VBScript, JQuery, AJAX, Dojo, QUnit, Perl and Python.

Tools & IDE

Green Hills Multi, Rhapsody, Xcode 6, Esri, ArcGIS 10.1, ArcPad, SQL Tools, Altia 9.2, ANTLR v4.0, Rowley Tool, Keil, NetBeans IDE 6.5.1, CodeWarrior IDE Version 5.7.0, Cosmic Compiler Version 4.7, Matlab Optimization toolbox, IAR Embedded Workbench for MSP430 V4, DevRocket, Microsoft Visual Studio 2012, Crystal Reports XI, Eclipse, Studio 5000 Logix Designer™, CodeSourcery and VxWorks Workbench.

Finding memory leak or performance: For iOS apps Xcode: run -> Start with Performance Tool -> Leaks, Rational Purify, NuMega DevPartner Studio, Splint, and Valgrind.

Software Technical Architect Known

Developed the SRS & SRD from the PRD. Object-oriented analysis and design using UML, build user defined language and compiler using ANTLR library using MDA. Building fault-tolerant systems. CAN using MQX/M multi-processor real-time kernel. Real-time, multi-processor, multi-threaded automated systems. Developed firmware software incorporating Unified Extensible Firmware Interface (UEFI) specification. LonWorks Technology. Microsoft Office SharePoint Server 2007. Cascading Style Sheet (CSS), SQL Server Integration Services (SSIS) and SQL Server Reporting Services (SSRS). Microsoft Excel macros to generate C, C++ and .Net code for defining inter system interfaces and Help's .xml & .html files automatically. Having an excellent knowledgebase on Graphical User Interface GUI, User Interface (UI) using User Experience (UX) design with knowledge of Human Factor & Ergonomics for Consumer / Medical Products

heavily used UI Wireframe for version control. Used Framework like Cocoa and MapKit on Mac OS X. Used UIKit Framework to develop iOS application. Good amount of work experience on InvisiLink™ wireless technology, extensive work exposure on Entity Framework in .Net Framework 4.0/3.5 and legacy ADO.NET objects as a part of CRUD (Create, Read, Update and Delete operation) with database and database Connectivity API's (ADO.Net) in Web Applications and WinForms Application. WCF (SOAP or ReST) service and multi-tiered client/server distributed applications using MSMQ Series or at the embedded level using any available low speed serial bus communication channel like RS-232 (RS-422, RS-485, UART), I2C, SPI or CAN. Developing database objects such as DTS Packages, Procedures, Functions, Tables, Triggers, and Indexes using PL/SQL Programming, SQL Analyzer, SQL Profiler, Enterprise Manager and SQL Server Management Studio (SSMS) of MS SQL Server. Pipeline Open Data Standard (PODs) 5.0/4.02. XML Technologies like XML, XSL (XSLT, XSL-FO, and XPATH), XSD, XLink, XPointer, SOAP, WSDL, UDDI, and RDF in windows application and web services development. Service-oriented architecture (SOA) using .Net for windows application and web services. Windows Communication Foundation (WCF), Windows Presentation Foundation (WPF), WPF Application Framework (WAF) and Windows Workflow Foundation (WWF) in .Net Framework 4.0/3.5/3.0 and Language Integrated Query (LINQ). Analog signal processing. Interrupt-driven communications (RS-232, I2C, SPI). Bit-mapped graphics design and implementation. Developing Windows-based tools to assist electro-mechanical development, testing, and manufacture. Electro-mechanical system integration and debugging. PC-based data acquisition and control system development. Reusable software design and development. Integration of complex desktop application with SAP ERP system using SOAP Integration technology. Excellent knowledge of Common Industrial Protocol (CIP).

Hardware / Processors

Cyclone V SoCs, Advantech's PCM-9376, LPC2368, MC73110, AT89C51AC3, Atmel's SAM7X/XC ARM7 32 bit Microcontrollers, AT91SAM9263, Oscilloscope , ARM7 NXP2294 and NXP 2368, MSP430, XScale PXA270, 8051, Motorola 68332, TS-459 Pro II Turbo NAS, Intel x86/Pentium, PowerPC, M68k, RISC, CISC and multiple derivatives.

Operating Systems

Mac OS X Yosemite / EL Capitan, Ubuntu, Linux, Unix, NAS system QNAP 4.1, Windows 10/8/7/XP/2000/98/95/NT (Workstation/Server 4.0 SP6a)/2000/2008/2013(Advance Server), SCO - UNIX, HP-UNIX, SUN-UNIX, MontaVista Linux and Novell 3.5

RTOS: VxWorks, QNX OS for Medical, µC/OS, Tiny X, pSOS, MontaVista Linux, RTX (Keil), Keil's RTX51 Tiny RTOS, Nucleus RTOS, ctl (Rowley), and INTEGRITY RTOS.

Mobile OS: iOS, WindowsCE 5.0

Virtualization

Use of UI wireframe to create mockup UI models, like indigo-studio of Infragistics.

VMWare Workstation 11 – Creation of VM image from .iso and .gho for Window 7 / 8, iOS, Mac OS X Lion / Yosemite, and Ubuntu Operating Systems.

Citrix XenServer for Desktop virtualization.

Citrix XenApp and XenDesktop for application and desktop virtualization. Extensively used Citrix Channel SDK for development.

Database

SQLite, SQL Server 2000 / 6.5 / 7, Oracle 11g/10g/8i/7.3, MS-Access, and Sybase

Requirement Management

Rational ReqPro and DOORS

Design Tools

UX – Mockup and UI wireframe, Enterprise Architect 7.1, IBM Rational Software Architect, Rational Rose Enterprise Edition, Rational Rose Model Integrator, Rational XDE, Microsoft VISIO, Word and Excel.

Construction IDE Tools

LabVIEW, SourceInsight, Understand for C++, Eclipse, Silk Edit and Notepad++

Configuration Management

Application Lifecycle Management with Visual Studio Team Foundation Server (TFS), VSS, MultiSite Rational ClearCase (UCM or Base), Surround SCM, PVCS, and SVN

Problem Tracking
FogBugz, ePMS, Rational ClearQuest, TestTrack Pro and Rational Quality Management (RQM) and Rational Team Concert (RTC).

Software & System Testing
Rational Visual Test, NUnit and in-house developed framework.

Operational Proficiency:

Personal Capabilities
- Strong Communication and Interpersonal Skills.
- Self-driven and self-motivated.
- Capable of working independently or in a team.
- Good Team Player and Team Leader.
- Able to adapt very fast to changing needs and requirements.
- Ability to Handle pressure and deadlines and ensure a timely delivery of required quality.

Project Execution Methodologies
Production Support and troubleshooting. Iterative Agile Methodologies (RUP, extreme Programming and SCRUM), Waterfall methodologies and Test-driven development (TDD).

Development Methodology, System Integration Methodology, Re-engineering & Migration Methodology, Product Methodologies, Other Project Types, Test Engineering Methodology, Maintenance Methodology, Program Management Methodology, Enterprise Software Methodologies, and Large Development Project Methodology.

Compliance
FDA-compliant process and documentation for PMA and 510K, including Software Quality Assurance Plan, Requirements Management, Risk Hazard Analysis, Verification and Validation Planning and Execution, Configuration Management, COTS Management, reviews and audits, and release procedures through the Agile system. Involved in creating the Risk analysis and Mitigation plans. The risk could be of safety or hazardous from Quality System Regulation (QS)/Good Manufacturing Practices (GMP) - 21 CFR Part 820 or it could be from the interdependency between different departments of this project development. Planning and execution of Quality System Regulation & ISO 13485. Risk assessment and hazard mitigation for class II/III medical devices.

Processes
Releasing BOM through the agile system.

Domains Known
Healthcare in developing class II/III medical devices, Finance and Banking.

Work Experience:

Senior Software Engineer & Solution Architect (Sr. Software Consultant / Contract) **[May 2004 – Present]**

Working as an independent contract consultant since May 2004 to present –

Roles and Responsibilities handled till date:

- Embedded Software Engineer – involve in developing firmware using TDD (Test Driven Development) framework. Develop specific algorithms like noise removal using mathematical filter(s), data accumulation, data processing. Defining system / process work flow by developing core architecture / framework of the system. Use of LabVIEW, oscilloscope or any proprietary in-house developed tool(s) to determine the hardware specs while in design and development phase of the overall software development cycle. Using JTAG to debug and deploy the developed application on the target device. Develop device driver for RTOS firmware and for UI module / System.
- Software developer – Involve in writing code which is a complete program by showing all the required features, which is testable, and which is debug-able in according to corporate standards and procedures. Work as a collaborative team member in engineering projects
- Solution Architecture – documenting the high level and low level design documents like create SDS (Software Design Specification) for both hardware and software perspective using various design tools to document.

- Requirement writer – document the requirements from scratch like PRD, SRD, and SRS, in the Rational DOORS tool or using MS Word document tool. Used company / FDA / ISO 13485 guideline to get it implement.
- Project Manager – Involved in analyzing the requirements and translates them into task specifications to delegate amongst a team of developers. This also involve disintegrating complete project / big task into small and track able tasks, estimations, scheduling and keep a track of overall schedules / achievable milestone, risk analysis, mitigation plans, making strategies and plans for the execution of the project (Used Microsoft Word Excel and Microsoft Project Plan to create the required documents). Collaborate with groups outside of direct responsibilities including other engineering groups, Quality, Regulatory, Marketing, etc. Serve as a contact point for outside vendors and consultants. Makes decisions independently on engineering designs, problems, and methods related to field of expertise. Serves as a process champion for continued improvement in software development process. Run the Scrum Sprints.
- Team Lead – Involved in demonstrated leadership skills and/or technical expert within the software development team, by mentoring / guiding / motivating the team member(s) to achieve the committed plan and execution of tasks. Leading team as a scrum master. Drive the team to achieve the desire goal, by defining design, development, testing and documentation required for the sustaining engineering software projects. Grasping issue(s) (both technical and non-technical) quickly, makes educated and takes critical decisions / judgements. Identifying the areas which require, proof-of-concept / stress testing / stressing the need of prototyping, which helps defines technical direction for future development efforts and mitigate the risk associate either in terms of complexity or robustness of the system. Making aware and compel the team to follow process and guidelines defined by the company.
- Administrator – For Agile product life cycle management solution, ClearCase (CC), PVCS, VSS and other source control tools. Microsoft Office SharePoint Server 2007 for Design and document control. ClearQuest (CQ) for defect tracking and defect management. Also helped the organization to implement the RQM and RTC for complete Application Lifecycle Management (ALM).

◆ Some more essential functional responsibilities include –

- Practical application of an object-oriented development methodology in an embedded system
- Generate and evaluate functional and design specifications
- Evaluate functional specifications and cost targets and develop or approve design concepts to meet them.
- Work with project leaders to define assignments, schedules, quality expectations, and other project criteria.
- Monitor and report on project status. Present results and recommendations in an executive summary form.
- Participate in defining product requirements.
- Characterize system and component performance
- Confer with technical personnel outside the department and assist in the design of the system.
- Author test cases and sequence diagrams
- Input into system test plans.
- Assist with triage of problem reports and provide resolution progress.
- Troubleshooting / debugging the system using hardware breakpoints or software breakpoints.
- Defect resolution posted by either V&V team or by end customer, code review or peer to peer review.
- Maintain various engineering tools used to debug, analyze and test embedded products.
- Help setup and maintain the set of embedded development tools like compilers, and debuggers, etc.
- Support of software systems as necessary
- Collecting requirements from the business stakeholders.
- Drafting the requirements and getting the approvals on the defined entry and exit criterion of the developed system.
- Conducting UAT (user acceptance test).
- Conducting gap analysis and define the new specs for the new enhancements if required in the submitted reports to all the business stake holders.

- Final cutover deployment.
- Define enhancements and testing of business functionality.
- Propose the redesigning of existing product and get required approvals from the business stakeholders and run the SDLC.
- Analysis and research for performance tuning of the product.
- Demo the testing technological compatibility as in proof of concept exercises to the business stakeholders.
- Work at various levels like SME (subject matter expert), TM, TL, developer, Customer and field support of technical nature, etc…

◆ Own the ownership of complete software stack. Design, developed and making a successful execution of the project completion for each agile iteration / phases of the complete project.

◆ Release and distributed BOM through the agile system.

At Rockwell Automation, Mayfield Heights, OH **[April 2015 – Till date]**

- To develop and enhance the Metadata object module in the firmware for ARM cortex A9 processor running on multi-core (4 core with 4 different RTOS VxWorks, Allen Bradley OS, BearMetalThreads and embOS. Primary OS is VxWorks with the Hypervisor to load other OS and information is shared using RPC protocol, between different operating systems.). This is a part of This module enables the more enhance and enrich the data, which user can define using "Studio 5000 Logix Designer™" programming language (Ladder Diagram, Function Block Diagram, Drive control blocks, Sequential Function Chart or by Structured Text). This involve writing function specs, software design document and writing code in C++. Unit testing using CppUnit.
- This Metadata Object is an extension over the Common Industrial Protocol (CIP).
- Having a good command on the "Studio 5000 Logix Designer™" programming languages (Ladder Diagram, Function Block Diagram, Drive control blocks, Sequential Function Chart or by Structured Text).
- To develop and enhance the custom features for the "The connected Enterprise" product as per the customer engagement specification.
- "The connected Enterprise" product enable the customer to access the information across the platform. Web based, Windows based, Mac OS EL Capitan, Android and iPad / iPhone. My job is to develop generic .NET C# WCF ReST full service modules which can be consumed by any one of the said platform. Also, to develop custom windows based UIs. This involve writing functional specs, designing design document and writing code in C++ and .NET C#.
- Complete Development is done using agile TDD methodology.

At Diebold, North Canton, OH **[March 2013 – March 2015]**

- To develop the firmware for the Cyclone V SoCs (which is a FPGA (Field-programmable gate array) and SoC (System on a Chip)) and ATSAMA5D33 LPDD2 is used to control and process the ENA and IDMBD hardware. IBM Rational Rhapsody tool is used to have UML based embedded software application development environment for INTEGRITY RTOS. Main focus is on Firmware Development of a common multithreaded firmware framework with complex embedded architectures on a Green Hills platform using INTEGRITY RTOS to control lots of stepper motors. MODBUS protocol is used to communicate between different devices. UI / Main processing module has implemented the Unified Extensible Firmware Interface (UEFI) specification for the New Bulk cash / check / mixed (cash + check) depositor hardware called for Enhanced Note Acceptor (ENA) and Bulk Document Intelligent Depository Module (IDMBD) for Diebold's UI Windows 7 hardware module. This new hardware and software combined should act as a plug & play type of system. If the new hardware is plugged-in in old software then then the old system should raise an error stating the unknown type system plugged-in. As part of the Dispenser development team lead drove the collaborative efforts of code shared between many Firmware Developers for large engineering projects in the design of ATM Cash and Check Movement Modules and Systems for the upper layered of the overall system architecture. This include implementation of device drivers for all these equipment under windows 7 OS.
- The main UI driving module is a custom build board and hence we had to develop supporting drivers for HDMI, PCI Express, SATA, USB interfaces to communicate with different modules of the system on

custom build Windows 7 module. These drivers where part of the Unified Extensible Firmware Interface (UEFI) specification implementation.

- To design and develop the new UI using UX principles (using mix technology of HTML5, CSS3 and WPF). Developed a framework which enables the ecosystem of universal plug & play, i.e. the workflow can be changed / customizable as per end customer specification. Hence this framework is capable of changing the behavior of a baseline product – by modifying the XML based configuration file and deploy the new/changed .NET dll(s). This framework is developed in C# .Net 4.0 using .NET's reflection technology and dependency injection framework on Windows 8/7 (to be PCI Compliant). This new framework is going to give an edge to Diebold to extend/handle any future enhanced/customization requirements in a very small timeframe and very easily.
- Develop domain feature which will deliver the Hybrid DA (Deposit Automation) feature, which allows the ATM application to use an advanced check and cash depository modules; to process raw checks and cash items; but emulates an envelope deposit transaction to the transaction host that does not support the advanced devices in its load. This feature also delivers a Stateless solution which allows the ATMs to do away with the legacy way of performing transactions and the host does not have to send down states and screens messages to the ATM. These features are implemented in two ways. Through new activities and through extending base activities. Activities are modules of code that have a specific purpose. These Activities are then utilized as part of a scenario and thus ultimately executes the entire workflow of the ATM's possible transactions.
- Complete implementation of UI using dynamic generation of HTML 5 pages using HTML 5 templates & CSS3 + JQuery, AJAX, JScript / VBScript, Dojo, QUnit and hardware integration for Diebold 9900 In-Lobby terminal.
- Developed an iOS application using Objective-C, ESRI's ArcPad or apple's MapKit Framework and UIKit Framework for Cardless Cash Access with FIS Mobile Wallet which provides added security to standard ATM use by dramatically reducing the threat of skimming. This app also help the user to locate nearest ATM. The interface between Wintrust system and the ATM is done via .Net WCF web service to dispense the cash to the customer, once the QR code and user is authenticated.
- Integration of new Diebold 7500 terminal with new depositor hardware called as CCDM2 (Cash/Check Deposit Modules version 2). CCDM can accept and process a mixed bundle of check and cash.
- Responsible of design, develop and deliver custom flow and customization requirement define by either the network / bank which is consuming this new device. Each project is independent to with respect to the company baseline product.
- Create Virtual Machines using Citrix XenServer, XenApps and XenDesktop for developers and testing team to access development and testing environment at various geographic location (the use case was developed for the development centers present at Mexico and testing lab at India). For some cases used VMWare Workstation 11 to create VM's of the system for easy demonstration for the marketing teams, which they can carry in their external pen drives.
- Used ActivePerl – Perl Scripting to implement WiX process – To create .msi and .msp(s) depending on the phase of the project(s).
- Used Python Scripting to generate test values and to run automated test cases.
- HP ALM Quality Center – complete automation done developed code run over the automated test cases quality at both firmware level as well as UI level. After satisfied test results promote the software to the SQA to carry out manual testing.
- Modify an existing error logging system to log system log on a virtual channel driver (which is nothing but iSCSI drive over SSL layer) which logs all the bi-directional acknowledgement of communication between ATM machine and the driving network and on any timeout threshold reached message is entered into the mail slotting transmitted the complete system log to support group for future enhancement and bug fixing.
- Be the champion for the success of firmware development projects and embedded ATM security products. Take initiatives to ensure success.
- Support of software systems as necessary

Currently I'm acting as an architect / team lead with a team of 10 on-site developer and 5 offshore testers. 70% of efforts go in coding and software development and 30% goes in management.

At Coler & Colantonio Inc, Norwell, MA **[October 2011 – February 2013]**

To own the development of Intrepid™ for Pipeline product suit at a product level.

To migrate the application from windows platform to Mac OS X v10.7 Lion using apple's Objective-C, Cocoa and MapKit Framework.

For a Pacific Gas and Electric Company (PG & E) customer – customize the Intrepid™ and integrated it with their SAP ERP system (Systems Application Programming for Enterprise Resource Planning system) using SOAP (Simple Object Access Protocol) technology. The SOAP is implemented using C# .NET REST (Representational state transfer) web service, which is acting as a bridge between SAP ERP system and the Intrepid™. Also helped C&C to get this PG & E specific implementation to be merged into their main product baseline, as a feature, so generic in nature which can be customize for any other customer.

Developed a web based Intrepid™ system called as Decision Support System (DSS) interface using Silverlight and ESRI's web GIS technology. This is a lightweight web interface helping the customer to view the GIS system on a laptop when user is on a field inspection or so. Backend processing of the UI was developed using C# .NET REST web service to process all the incoming user requests via Silverlight system and sends back the responses.

Developed an iPad's mobile enterprise application using ESRI's ArcPad or apple's MapKit Framework, iOS library and C# .NET REST web service for backend processing. Here we reused the same web service we developed in the Silverlight project. Hence maximum efforts went into iPad's Mobile application development.

Also, helped the organization to implement the RQM and RTC for complete Application Lifecycle Management.

Acted as a team lead to handle the distributed team of 10 members – out of which 3 were at PG & E California. One was at Main, New Hampshire, 3 at Plymouth office and 3 were at Norwell office with me. 60% of the efforts go in development and 40% goes in team coordination and management.

Used Citrix XenServer to create virtual Host system to deploy whole Intrepid™ and ESRI's ArcMap to easy access from anywhere.

Used Citrix XenDesktop to virtualize the Intrepid™ System.

Used Perl or Python scripting to run server sided ArcMap processing. Which scripting language to use were guided by the end customer specs.

At Haemonetics Corporation, Braintree, MA **[August 2009 to September 2011]**

- To develop and architect The Cell Saver® Elite™ system with the following tasks.
- New UI using Altia library with .NET compact framework on Window CE 5.0 on Advantech's PCM-9376 UI hardware with touch screen.
- This new UI and a help subsystem have multilingual support which includes East Asian language as well (Simplified Chinese, Korean and Japanese onscreen keyboard (OSKB) for search and data entry functionality). Used the Input Method Editor (IME) for Windows CE 5.0. This includes the development of customizing the Windows CE 5.0 OS image using the International OS Design Development for Windows CE 5.0 and development of customized IME Candidate Window for Windows CE 5.0.
- Develop an Integrated bar code reader–for quick, accurate input and tracking of data
- Renovate / re-design the firmware to handle the new hardware specifications. Writing device drivers.
- To improve the performance of the overall system. The major time we reduced in boot time from 11-13 minutes to 4-5 minutes.
- To improve better blood process with high-level of hematocrit value, by removing digital noise from the system. The noise was there in the system due to high speed centrifuge and pump causing noise in the line sensor and in bowl optics sensor. Implemented the digital mathematical linear formula to the data accumulation and then implemented the take action depend on the proper delta on these sensors. Also found the earthing is not done properly after running proper LabVIEW test program and probing proper test points of the system. To accomplish this developed a LabVIEW test program kept it running for a week to accumulate all the required data which help us drill down to the root cause analysis.
- MC73110 3-Phase Motor Control IC is used to control the high speed of centrifuge and pump motor.
- NXP (founded by Philips) LPC2368 was the main microcontroller board used Keil's RTX RTOS. This is a ARM7 32 bit microcontroller.

- The SmartSuction® has the AT89C51AC3 microcontroller board which used Keil's RTX51 Tiny RTOS. This is an Atmel's Flash ISP (In-System Programmable) enhanced 8-Bit microcontroller with 64KB Flash Memory. Using external clock from LPC2368 and communicating on UART with LPC2368.
- It also include creation of device drives for these hardware with interact with Window CE 5.0 UI module.
- Integrated the two system The Cell Saver® Elite™ system and secured BloodTrack® Manager portal software
- To do extensive automate testing of The Cell Saver® Elite™ system developed a Test Automated Tool (TAT). Customization of TAT is very easily to test any type of software / hardware. Complete system or sub-system. TAT has it won C++ derived language for rapidly develop testing scripts. TAT is developed using the ANTLR library to compile the test scripts and execute them.

At Wabtec Railway Electronics, Wilmerding, PA **[January 2008 to July 2009]**

- Develop a test automation framework plus a tool (implemented to work as automated test equipment (ATE) test platform) which will help them in testing different types of event recorder products, which WRE manufacture the most. As it records the complete parameters of the safety specifications specified by Association of American Railroads (AAR). It is very essential to carry out the test of this product at various phases. This test framework is not capable of running a user designed test scripts. This is very specific to what WRE does on day to day basis in-terms of testing a system.
- A latest Braking system product (New Generation Braking system). For which the system should -
  - Main processing board is based on Atmel's SAM7X/XC ARM7 32 bit Microcontrollers based family uses Keil's RTX RTOS.
  - UI is based on Atmel's AT91SAM9263 (which is an ARM9 32 bit microprocessor) uses Nucleus RTOS and have Infexion UI.
  - Extended the firmware to support LSI B3 protocol over RS-232 asynchronous port along with existing RS-422 synchronous port.

At Dexcom, San Diego, CA **[May 2007 to December 2007]**

My job was to develop Continuous Glucose Monitoring Engine product. A class II medical device. Which will packaged into firmware onto small low power MSP430 hardware of Texas Instrument (TI) with ASTRIX RF receiver (AMIS 52100) and to do verification and validation using C# NUnit test environment (implemented to work as automated test equipment (ATE) test platform) with the help of NI-845x of National Instrument. NI-845x gives the capability of SPI, I2C and GIPO over USB for windows PC to establish communication channel with MSP430 hardware and writing device driver.

The main requirement was to store the data on flash card and should be stored in an un-fragmented manner. The firmware developed using Micriμm® μC/OS-II RTOS.

At Medtronic Inc, Elizabeth, NJ **[May 2006 to April 2007]**

My job was to develop automated testing tool for The Medtronic CareLink® Programmer product. A class II medical device. The Medtronic CareLink® Programmer is a portable computer system used to program and manage cardiac devices in the clinic and procedure room. Enabled with Conexus® wireless telemetry the programmer provides efficiencies at implant and follow-up. The Medtronic CareLink® Programmer is the industry's first truly wireless follow-up system.

This testing tool (implemented to work as automated test equipment (ATE) test platform) has its own custom defined API VC++/VB COM library (more in-line with the domain and platform for which it is used). VB script engine is use to create a test scripts. This test script is responsible to make a call these custom API's. When these test scripts are once verified against the desired test flow, they are base-lined. Writing device driver to test the hardware independently. During the final run these baseline scripts are executed for system final verification and validation (V & V) purpose. Success of this tool was very much significant from the quality control, which is a mandatory from the FDA perspective.

At St. Jude Medical, Sylmar, CA **[May 2004 to April 2006]**

1. To develop Universal Engineering Programmer (UEP) tool (implemented to work as automated test equipment (ATE) test platform) is used in Pacemaker technology for clinical R&D and firmware testing. UEP is the first product were all R&D work and newer requirements are implemented and then later on it is been passed on to subsequent programs to implement the same.

2. To develop new generation pacemaker device and to renovate the existing UI (existing UI was developed using MetaWINDOW for VxWorks for more info click) application (Merlin™ Patient Care System, which interrogate the new generation pacemaker device and display pacing information recorded or generated by the pacemaker to regulate the pacing of the human heart.) with the change of hardware and operating system (MontaVista Linux RTOS) a modified User Interface (UI) using QT library and workflow. A class III medical device. SJM would prefer that we should re-use the existing code to the maximum extent possible and should successfully port the firmware and software application from VxWorks OS to MontaVista Linux. In the design and development of the new user Interface, SJM would like us to focus on maintainability and extensibility of the developed application, which would facilitate ease of enhancements in the future. This also include writing device driver (called as telemetry module) to establish the communication between inductive wand and pacemaker device. SJM has a business requirement that the renovated application to be available for FDA submission at the earliest. This forced us to work under a very stringent deadline.
3. To develop Merlin@home® Transmitter device, this is mobile handheld device. The Merlin@home transmitter uses InvisiLink™ wireless technology to provide seamless, remote follow-ups and monitoring for patients with St. Jude Medical® RF implantable devices from the comfort of their own home. The Merlin@home transmitter helps physicians oversee their patients' care management more efficiently, and allows them to focus on patients that require more critical attention.

At Overseas Software Limited (COSL), India (currently known as Polaris Software Lab Ltd.), offshore development center for Citibank N. A.; [May 2001 to April 2004] as a Technical Architect

Worked on Paylink32, which is currently live in almost each and every site of Citibank N.A. under EMEA region (deployed in Central Europe, Eastern Europe, Asia and African regions. Migrated old COMMS32 System to new Redesigned COMMS released system for all these countries. Direct responsible for requirements analysis, data modeling, business logic mapping, architecting the data warehouse, designing the schema, integrating data to the application, data extraction, data validation, system testing, and documentation.

At ADCC Research & Computing Centre Ltd., Nagpur, MS, India; [February 1998 to May 2001] as a Senior Software Engineer

ADCC Research & Computing Centre Ltd. is software consulting firm for which I use to do design and development for clients Nagpur Improvement Test (NIT) (Information Management System), IN-EX-SYS AG. (Securities (Finance)), Hanran.com (Securities (Finance)), DHEL Courier Services (Courier Tracking System), South Eastern Railway of India (Public Announcement System), Central Railway of India, and South Eastern Railway of India (Information Broadcast and Recording System).

Education:

- Master of Science (MS) in Software Engineering (Major in Software Project Management) from Birla Institute of Technology and Science (BITS), Pilani, India [2004 – 2009]
- Post-Graduate Diploma (Major in Image Processing) in Advanced Computing from C-DAC from ADCC Research and Computing Center Pvt. Ltd., Nagpur, Maharashtra, India. [1998 – 1999]
- Bachelor of Science (B.Sc.), Electronics and Telecommunication from Institute of Science, Nagpur, Maharashtra, India. [1995 – 1998]
- Higher Secondary Certificate (HSC) – 12th Grade from Dharampeth Science, Nagpur, Maharashtra, India. [1993 – 1995]
- Secondary School Certificate (SSC) – 10th Grade from Saraswati Vidyalaya, Nagpur, Maharashtra, India. [1980 – 1993]

Awards Received

- Letter of Appreciation (January 13, 2010)
- Internal Auditors Training Programmer (ISO 13485) - (July 19, 2006)
- Team Award (Year 2005)
- Certificate of Achievement for outstanding contribution (April 18, 2005)
- Team Award (Year 2004)
- 5 start award (October 1, 2002)