Akbar Ali

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| **IT Related Experience** | 11 years |
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| **Education** | **Master of Electrical Engineering, 2007**  Gannon University, Erie, PA,USA  **Bachelors of Electrical engineering, 2005**  Osmania University, Hyderabad, India |
| **Languages** | English |

**Profile**

* Over 11 years of working experience as an Engineer in the Industry.
* Expertise in developing software for driver instrumentation and Infotainment units for different OEMs such as Ford, Toyota, Honda and Chrysler.
* Expertise in using CAN/LIN/Ethernet bus to communicate with VCU, ECUs on the bench and on the fields.
* Expertise in building firmware/software to deploy on different hardware systems such as ECU and Gateways.
* Expertise in developing the logic for the components of the HMI subsystem in the C,C++,MATLAB state flow diagram.
* Expertise in developing software for different microcontrollers electronic control units.
* Expertise in application development using C,C++,MATLAB/Simulink/State flow programming.
* Expertise in providing software solutions in different environment of windows ( 99/XP/Vista/7/8/10) QNX and UNIX/LINUX operating system.
* Expertise in understanding the system request document (SRD),Change request(CR),Technical Specification Document(TSD) for the different features of the electronic control units.
* Expertise in updating the graphic face plates in ALTIA(7/8/10), Elecktrobit, Autodesk 3DXmax,QT for the new features.
* Expertise in developing both white box and black box testing use cases for the software releases to text on the bench and on the vehicle.
* Expertise in creating FMEA and DFMEA for the instrument clusters
* Expertise in creating DRBFM for the instrument clusters for Toyota
* Expertise in creating 5 why's, 8 why's and 8 D reports for the quality improvements of the Hardware, Mechanical and software components
* Developed efficient user interface in C,C++,MATLAB/Simulink to interact with different units of locomotive system and to analyze the simulation results.
* Expertise in developing embedded software for VCUs, ECUs, HMI,MODBUS and PLC.
* Experience in working with Allen bradley, Simens RSLOGIX and the related modules that communicate with PLC and HMI.
* Expertise in Shell scripting and UNIX command-line programming. **PROFESSIONAL EXPERIENCE**

**University of Lethbridge, Lethbridge, AB**

**Job title: Research Assistant/Parallel Computing Analyst**

**August 2017–Present**

University of Lethbridge is one of the top university in Alberta, It provides variety of majors for the student to be successful in their careers.

**Responsibilities:**

* Optimizing the huge matrix dimensions in the programming languages such as C,C++ on LINUX operating systems
* Optimized algorithms make compatible on different parallel computers
* Use the OpenMP language to perform the optimization on Medusa machines (super computer)
* Analyze the efficiency and scalability of the algorithms on the parallel computers running the LINUX operating systems
* Compare the results of the most optimized algorithms for different sorting algorithms
* Using Methodologies on overcoming the race conditions on Multi threads
* Use different approaches of locality to create the most optimized algorithms
* Run the optimized algorithms on the GPU card using CUDA programming languages
* Compare the optimized results using different the floating point operations
* Use the optimized algorithms on the GPU cards from NVDIA with various approaches such as shared memory registers

**Technical Environment:** C, C++, OpenMP, CUDA, LINUX, Python, Multi/Many Core processors

**BTS solutions**

**Lead Engineer**

**September 2016–August 2017**

BTS solutions outsourced engineering services for several industrial domains such as automotive, manufacturing, transport.

**Tasks Performed:**

* Modified and created new features in C, C++ and Python.
* Organized the technical review meetings on the design for the different hardware platforms.
* Designed the full software systems for the manufactures.
* Analyzed the defects logged by validation/verification team and fix the defects in the software or rejected the defect by verifying the customer requirements.
* Create different API's to communication with other systems for the implementation of the each request from the customer.
* Wrote and covered all the test cases in the testing which includes software systems involvements.
* Performed hardware testing on the implemented features to assure it matches requirements.
* Developed testing plans and distributed the feature works to the team.
* Monitor and track the team member progress
* Thought team members on achieving the full optimization of software design methodologies on the different hardware.
* Assigned software defects to the team and informed the management about the progress towards each milestone.
* Solved all the obstacles on the project by assigning the resources based on the priorities and necessities.

**Technical Environment:** C, C++,Python, LINUX, CAN/LIN/Ethernet, JIRA, Jenkins, Vxworks

**Continental Automotive**

**Sr. Systems Engineer/ Project Manager**

**September 2014–August 2016**

Continental Automotive is a leader for innovation for mobile automotive group. It provides solutions for the networked vehicle and driver’s support in the form of user-friendly and intelligent systems.

**Tasks Performed:**

* Responsible for product design, development and debug support at the customer locations on the vehicle for each individual releases.
* Supported re-flashing activities at the customer locations with the latest software and labels.
* Participated in the internal and customer product development meetings.
* Supported internal and customer release testing at the various levels on the customer site.
* Supported customer software test and root cause analysis and problem resolution related to the unit.
* Oversaw the customer issues related to the retrofit, reflashing units at the vehicle.
* Provided technical direction to relevant Support Groups and Engineering Groups meeting FMVSS and RMVSS.
* Resolved issues on assigned Component or Subsystem Technical Specs.
* Initiated system requirement change requests.
* Tracked customer change requests for design and development of parts.
* Recommend additional testing and development as required based on FMVSS and CMVSS
* Determined and investigated design alternatives.
* Assisted with the resolution of system issues and determined the root cause and resolution to verification and test incidents.
* Communicated with the customer on quality issues and improvements.
* Handled Project PDT meetings on the weekly basis, and tracked all team progress.
* Individually assigned tasks to all the disciplines lead, and actively tracked those tasks and deadlines.
* Handled customer meetings, explained the status of the project on all the disciplines.
* Created the Q& A for all the open issues between the customer and supplier.
* Assisted with the definition of system requirements.
* Fault prevention by means of lessons learned and transfer of know-how.
* Prepared and presented responses to action items.
* Assisted with the failure mode and effects analysis process.
* Maintained an awareness of programs and vehicle systems.
* Represented Customer’s position when communicating back to Conti Development Team.
* Documented open issues related to the product development, customer meeting minutes and supported driving issues to close.
* Created DRBFM for the Mechanical ,Hardware and Software components of Toyota clusters.
* Created 5 why's 8 why's for the issues or defects occur on the driver instrument clusters.
* Created 8D reports after the unit was in the production to improve the quality of the clusters.
* Acted as a primary interface between the customer and the Continental project team.
* Coordinated prototyping including scheduling, shipping, invoicing and tracking.
* Interfaced with the customer database and the system

**Technical Environment:** C,Visual Studio, SharePoint, SAP,PDLC,SDLC communication network CAN Bus, CANoe, CAnalyzer,ODB, AUTOSAR, Renesas, Infineon, FMVSS, RMVSS, CMVSS, Change Management sharepoint, DOORs,MKS.

**Visteon Corporation**

**Lead software engineer (HMI Subsystem)**

**July 2010–September 2014**

Visteon designs and produces components, system and modules including climate control, electronics, interiors lighting, engine induction, powertrain controls and mobile applications.

**Tasks Performed:**

* Involved in the entire SDLC from Requirements to the software release.
* Understanding the Design Change Request (DCRs) for the software releases.
* Reviewed the system requirements design (SRD) by going through theTeamCenter (TcSE) and make sure it matches the DCRs.
* Implemented the graphics change in the ALTIA/GDT/GDG/QT from Adobe Photshop and add the new control of images for the TFT display for the different programs of the OEMs.
* Implemented the graphics changes involving the presentation layer and graphics manager for the program of different OEMs.
* Implemented the function calls from the logic side in C,C++,MATLAB Stateflow to the translation layer for the program of different OEM's which uses the Kepler platform, Einstein platform etc .
* Implemented the big features like front video camera (FVC) and Compass for the programs of Ford.
* Designed the graphics for the development of Advance program which involves touch screen, haptic and gesture control for CES demo every year.
* Implemented the warnings, menus, settings, alarms, ADAS features for the driver instrument clusters for OEM's.
* Assured the code build without errors test it on PC simulation, than flash it on the target to verify the proper operation of the software and then checked in all the files in the rational clear case(version control system).
* Updated the logic in C,C++,MATLAB Stateflow for the various DI cluster features ,which used the Altia, GDT/GDG,QT based on calling different interfaces as per the SRD.
* Verified the requirements for the different design change requests with the product development team and ask for the updates and clarifications.
* Implemented the touch screen features like IPOD, USB, RADIO and NAVI in KANZI for the EVEREST platform for the CES shows.
* Designed the logic in the C,C++,MATLAB Stateflow for the Gesture, Haptic control to use the all the features of the EVEREST platform.
* Provided the different host interfaces to the integration team for the touch panel, Gesture, HAPTIC feedback when the user touches the touch screen.
* Involved in designing the architecture for the different programs between display micro and host micro.
* Involved in the re-flash event for the Ford ,Honda clusters which occurred due to the defect in software requirements.
* Analyzed the defects logged by verification/validation team and fix the software issue or reject the defect by verifying the SRD requirements.
* Implemented the Logic change in C,C++, MATLAB/Stateflow diagram; rebuild the simulation for the new logical changes.
* Changed the faceplate in the ALTIA, GDT/GDT,QT,KANZI design and gave the proper connection to the interfaces in C,C++,MATLAB.
* Connected the display logic and functional logic together for the implementation of the each design change request.
* Generated the graphics code (ALTIA)/GDT/GDT/QT for the target and check in the files in Rational clear case(VCS).
* Generated the logic code in C,C++, (MATLAB/Stateflow) for the target and check in the files in Rational clear case(VCS).
* Built the code for the target on QNX,LINUX operating system by using the latest baseline in the version control systems.
* Flashed the code on different hardware targets through Lauter Bauch on the display HMI side, and old baseline from the integration team on the host side.
* Performed the target testing on the implemented features and make sure it matches software requirements document,FMVSS,CMVSS.
* Documented the unit test plans for the each feature of the release and checked in the Rational Clear case(VCS).
* Labeled all the files in clear case with the new version number of the software.
* Send out an email to the integration team with the new label of the software and new features implement for the release.

**Technical Environment:** MATLAB/SIMULINK Stateflow, C,C++ ,Visual Studio, ALTIA,QT,GDT/GDG on LINUX,QNX operating system,SDLC communication network CAN Bus, CANoe, CAnalyzer,ODB, AUTOSAR,MISRA,CMMI,Freescale,Fujitsu,Renesas,infineon,FMVSS,CMVSS,Configuration Management(Rational clearcase,clear quest),Rational team center, team center, DOORs

**Verizon Communications Inc,**

**Sr.SQL Server Database Administrator**

**May 2009–April 2010**

Verizon communication is an American broadband and telecommunications company**.** Verizon provides several different types of land line services - standard POTS (plain old telephone service) as well as VoIP (Voice Over Internet Protocol) and optical fiber line services.

**Tasks Performed:**

* Involved in the entire SDLC from Requirements to Post Implementation support.
* Checked the spaces allotted on each drive and validate with the specification sheet from Hardware setup team.
* Assure system databases /clustered on E drive and SQL server is properly installed with windows as well as SQL server authentication mode.
* Designed developed and maintained the SQL environment
* Allocated the drives to SQL server using clustered administrative tools and dependencies session.
* Created a plan of the Databases which required more space and document in the spreadsheet.
* Database and Object Creation: Developed stored procedures, Triggers, Tables, Views, Cluster/Non-Cluster Index, Unique/Check constraints.
* Created and developed tables, views, indexes, functions and advanced queries for databases by using query analyzer and SQL Server Enterprise Manager.
* Developed several reports with consistent drill-down functionality including Drilldown reports, Summary reports and Master Detail reports.
* Involved in coding, testing and debugging programs for complex projects.
* Generated database monitoring and data validation reports in SQL Server Reporting Service .
* Used MS Access 2003 for the fetching the data from the SQL server 2005.
* Responsible for extracting transforming and loading the data using WINSQL from DB2 and analyze the data on pivot tables.
* Checked with the front end team to make sure that they can access the DBs from front end application.

**Railpower Hybrid Technologies**

**Electrical Engineer**

**February 2007-February 2009**

Railpower is the Locomotive Company which builds hybrid locomotives and cranes. Based in Canada, its main goal is to reduce operating costs and at the same time significantly reduce harmful emissions. Railpower builds Greengoat has overall capital cost savings 30% and about 90% reduction in smog causing NOX (Oxides of Nitrogen).

* Developed, implemented, and maintained the simulation capabilities of the electrical system for verification of control systems interface with the locomotive system.
* Developed detailed models of the subsystem for modeling of the electrical subsystems.
* Support control systems development as needed for new product development
* Studied locomotive performance from angle of inclination, declination and curvature using C,C++,MATLAB/SIMULINK simulations
* Supported Verification/Validation of software releases prior to field test of the locomotives.
* Developed the different locomotive models on C,C++,MATLAB/SIMULINK for simulation purposes to analyze the performance.
* Developed engine control, traction control, contactor control, propulsion control and exhaust sensors models on C,C++,MATLAB/SIMULINK for simulation.
* Managed simulation platform development for the appropriate performance of the locomotive systems.
* Developed models using S-functions in MATLAB for getting signals values through CAN/LIN channel for Hardware in the loop simulation (HWIL).
* Build the VCU and Gateway images on LINUX environment after building the software on C/C++,MATLAB.
* Developed the new software features for human machine interface (HMI) of the locomotives.
* Developed Hardware-In-the-Loop (HWIL) simulation for new control system development.
* Designed and developed automated systems in C,C++,MATLAB while integrating other third party subsystems software.
* Developed MODBUS in Python language between Allenbradley, Siemens PLC using RS 232,422 ,48 5.
* Designed program models for simulation to verify suitability and carryout modifications for the betterment of the system.
* Installing the software in MCIB boards (microcontroller) and testing it before it goes on the locomotive.
* Used analog and digital I/O cards for green goat simulator.
* Housing assembly for locomotive sections.

**Technical Environment:** MATLAB/SIMULINK Stateflow, C,C++ ,PLC,MODBUS on LINUX operating system, communication network CAN bus,DOORs

TECHNICAL SUMMARY

**Programming Languages** : MATLAB/SIMULINK,Vxworks,VB,PYTHON, PERL,LABVIEW,C/C++

**Operating Systems** : Windows 98/2000/2003/XP/7/8/10/VISTA, UNIX, LINUX and QNX.

**Software** : PLCs (Allen Bradley, Siemens S7), RS LOGIX, ControlLOGIX, SCADA,CNC, Rational Clearcase/Clearquest ,GIT, TeamCenter(TcSE), TeamCenter AppShare, Diagnostic test tool, WinCal, CANAnalyzer,CANoe, LIN, Trace32, lauter bach, RTL, visual studio .NET, T-SQL, MySQL Sharepoint, and P-SPICE,Open MP,CUDA ,Eclipse,AUTOSAR,ISO 26262,CMMI,MISRA,Microsoft suites, Adobe softwares.

**Hardware** : HVAC, BAS/BMS, Servo drives, EMI/EMC Testing SAS, RAID, Instrument Clusters, spectrum, rainbow and rainbow lite from Freescale,Fujitsu, Renesas,infineon micros.

**Designing** : ALTIA (8.075/9.1),GDT/GDG, Auto CAD,Electrobit, Auto desk 3DX Max,OpenGL, QT, PRO-E, FPGA, RF Design, PCB Layout,BOM, ARM Microprocessors, Microcontrollers, Microchip, Echelon, DSP, and DIP.

**Web Technologies** : CodeWright, Beyond Compare,DICOM, Win Merge, HTML, DHTML XML, UML, and JavaScript,Agile,Scrum.

**Testing** : Oscilloscopes, Signal generator, FMVSSS,CMVSS,Flow meters, Pressure, Transducer.

**Networks** : TCP/IP, Device Net, Ethernet, Modbus.

**Databases** : MS SQL Server 2000/2005, power point, MS Office, MS Projects .

**Business Intelligence tools** : SSIS, SSRS, SSAS and SQL Server Management Studio.

**Design/Version Control** : Enterprise Architect, Rational rose, Subversion and CVS