**Dinesharumugam Senthil Arumugam**

**Sr. C/C++ Developer**

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**Professional Summary**

* Around 9 years of hands-on experience in designing and developing high performant client, server and multi-threaded applications using C, C++.
* Expertise in design, development and implementation of distributed multi-threaded and multi-processing applications using C, C++, STL-containers [Vectors, maps, queue], Unix system Server programming (Unix Internals), Design Patterns, IPC, Shell Scripting, Socket programming, TCP/IP Sockets, XML, Oracle, Unix, Windows and RTOS environment.
* Developed Python, Shell Scripts, PL/SQL, T-SQL; created subprograms, procedures and functions, DB triggers, cursors and optimization techniques for SQL.
* Good knowledge in Embedded development using QT interface and QNX development area.
* Experience working on a wide range of microcontrollers/microprocessors such as 8051, 8086, ARM, PIC on embedded devices.
* Development experience with XML, JSON, TCP/IP, UDP/IP, SSL/TLS, HTTP and multithreaded application using IPC mechanism.
* Experience in using IDEs – Eclipse, Pycharm, Visual Studio, GNAT programming studio and Code Composer Studio.
* Experience in Socket Programming, IPC (Inter Process Communication) mechanisms under different OS/RTOS.
* Hands on experience in developing using Linux (Internals of Linux, debugging tools, mutex, semaphore, make files, Libraries).
* Proficient in using Debugging tools like gdb, dbx, pdb and other code analysis tools Coverity, cppCheck, Valgrind, gprof.
* Strong understanding of the Linux networking stack and the communication mechanisms and interfaces between the different components in the system.
* Worked with Git, SVN, CVS and clear case configuration management systems and used tools such as Rally, Review Board, Extra view and Clear Quest.
* Good experience with JENKINS and other build environment tools.
* Experience in using C and Assembly language to debug and update firmware versions.

**Technical Skills**

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| **Programming Languages & Scripts** | C, C++, C#, Python, Shell scripting, Core Java |
| **Operating Systems** | Ubuntu, Windows, Sun Solaris, RHEL, IBM AIX. |
| **Protocols** | TCP/IP, UDP, RTP, CAN, I2C, SPI, 802.11 Standards, SNMP, KWP2000, LIN, RS 232, GMLAN, KWP. |
| **Databases** | Oracle, MySQL, Microsoft SQL Server, MongoDB. |
| **Tools** | GNU emacs, Code Compare, eclipse, UML tools, MS-Office, Splunk, Jira, OpenGrok, Valgrind, gprof, Coverity, cppCheck, gdb, pdb, dbx, Jenkins, Wireshark and Charles debugging. |
| **Libraries & Frameworks** | STL, Boost, BDE, IPC, multithreading, sockets, SOAP web services, Software Design OOP/OOD, Design Patterns, Apache Active MQ. |
| **Version Controls** | Bit Bucket, GIT/GitHub, SVN, CVS, TFS, VSTS |
| **Build** | Jenkins, cppCheck, Coverity. |
| **Simulation Tools** | LabVIEW, Matlab, Pspice |

**Professional Experience**

**Client: Halvik Corp, VA, USA Duration: 2018 – Present**

**Role: Software Engineer**

**Responsibilities:**

* Design/Implementation of pricing module (average swaps, basis swaps, swaptions, and caps/floors on commodity futures) in C++.
* Developed C++ Trade Capture and Processing application which is a single unified platform for booking and tracking Credit derivatives like CDSI, Single Name CDS, and Index Tranches, etc. using network/socket programming and multithreading concepts.
* Responsible for providing technology solutions to the credit risk management business (specifically commodity derivatives and FX options).
* Developed SOAP services in C++ for booking trades for derivative instruments and receiving orders from external interfaces like SEF, ICELINK.
* Responsible for providing technology solutions to the equity business globally including design, development, maintenance, and user training of all vended and internally developed technologies.
* Developed asynchronous event model for processing and tracking transactions using RabbitMQ.
* Designed, developed and implemented new classes and objects in C++ for handling various trade and clearing events.
* Utilized various object oriented techniques and implemented new logic for processing ICELINK events and CLEARING messages.
* Designed, developed, and deployed new processes for sending trading events to downstream RISK applications.
* Developed new reports using Python to identify the sales margin overrides.
* Implemented code in Python to retrieve and manipulate data.
* Developed native UI using JavaScript with event handlers and fetching data using SOAP interfaces.
* Involved in production support and providing hot fixes to the production issues.

**Skills Used:** C++, Python, Singleton design pattern, Observer pattern, XML/JSON, JavaScript, Design Patterns, STL, gdb, multi-threading, Sun Solaris, AIX, Linux.

**Client: UPS, NJ, USA Duration: 2016 - 2018**

**Role: C/C++ Developer**

**Roles & Responsibilities:**

* Modifying existing build systems and building RPM packages for the new release candidates using CMake.
* Created C# console applications to manipulate data.
* Developed Application that would allow transfer of log files from Linux computer to Linux server using C++ multithreading environment.
* Experience using Agile/Scrum/Waterfall software development methodologies on customer collaboration.
* Responsible on providing infrastructure to launch and deploy latest release candidates.
* Refactored existing code by introducing inheritance based design.
* Improved the code efficiency by optimizing the code and caching frequently used data.   
   Managed SQL Server databases using C# with entity frameworks.
* Developed Complex database objects like Stored Procedures, Functions, Packages and Triggers using SQL, My SQL.
* Writing stored procedures in SQL Server and integrated into the application to access the data from databases and store the data into database. Writing SQL queries to import and export the values to database.
* The collection and storage of data, for processing at a scheduled time when a sufficient amount of data has accumulated using Batch Processing.
* Analyzing, designing and implementing change requests for the C/C++.
* Created some stored procedures, wrote the SQL queries for Sybase database and Written Shell scripts
* Used Data Access Object (DAO) classes within MFC to access the Database.
* Migrated from SVN for source control to git, local Github.
* Design Lead for re-design and implementation of GUI interface from MFC based application running on Windows to a QT based application running on Linux.
* Implemented logics to install/update/upgrade software packages in Reprogramming Application Manager using QT interface.
* Programming and Changing UI screens using C++/QT Used multi-threading and thread synchronization extensively.
* Strategize with the outside sales team to architect solutions utilizing the QT framework.
* Utilized STL and C++ algorithms to achieve optimal design efficiency.
* Developed new reports using Python to identify the sales margin overrides.
* Implemented code in Python to retrieve and manipulate data.
* Developed native UI using JavaScript with event handlers and fetching data using SOAP interfaces.
* Involved in production support and providing hot fixes to the production issues.

**Environment:** C++, Python, SOAP, SQL, XML/JSON, My SQL, Shell scripting, MFC, JavaScript, Design Patterns, STL, multi-threading, Linux.

**Client: Legion Insurance, PA, USA Duration: 2015 – 2016**

**Role: Embedded C Developer**

**Roles and Responsibilities:**

* Experience with software system requirements analysis, design, development, integration, and testing.
* Experience with network and socket programming for common protocols and standards, including TCP/IP.
* Experience with scripting in UNIX shell, Python, Perl, and Ruby.
* Experience with serial communications including RS232, RS485.
* Having experience on Ubuntu 8.04, 14.04 and 18.04 versions.
* Migrated code from Ubuntu 14.04(32-bit) to Ubuntu 18.04 (64-bit).
* Established a landscape server over AWS instances.
* Worked on sierra 3G and 4G cell modems to setup and provided training to customers.
* Developed software for Account Barcode Reader and smart card on TVM.
* Having experience with payment terminals like VX700, Pinpad, Bezel8 and Ingenico EPX.
* Having experience with different payment gateways like FIS, VPS, Chase Paymentech, Heartland Payment and Ingenico EPX.
* Designed unit test procedures for the functionality developed and validated on TVM.
* Provided customer support and provided the solution to field problems.
* Having experience on various dispensing trim types PSCD/LUCC/FEIG/Magnetic on TVM.
* Installing necessary Kernel drivers by adding patches of code to the source code in Linux.
* Worked on cash modules coinmech (6000, 6000XL and GL) and Bill mech (TOYOCOM, MEI).
* Provided training to field service team how to upgrade and downgrade bezel8 using FTP.
* Performed code review and S/W releasing activities.
* Coordinated with offshore teams to setup and Genfarelink on TVM.
* Report work progress continuously through attendance of daily & weekly project internal meetings.
* Experience with operating systems internals in Windows, UNIX, or Linux.
* Good understanding of software development/test tools and software test methodologies.
* Contribute effectively in the continuous improvement of project, team, and work environment by submitting improvement proposals whenever possible.

**Environment:** Embedded C, Design Patterns, SQL, git bash, Net beans, Linux Ubuntu, POSIX Threads, SVN, git, github, shell scripting, OOAD, BOOST libraries, gdb, Bit Bucket, Jira, Confluence.

**Client: LogicSoft, TN, India Duration: 2012 – 2015**

**Role: Software Engineer**

**Responsibilities:**

* Coding and implementation of routing software for handling customer queries and re-routing to appropriate divisions. The customer’s calls are automatically answered and place into a holding the queue until an agent becomes available.
* Developed libraries using LINUX IDE (Eclipse) for C++, C, UNIX Shell Scripting, Clear Case, Clear quest, QNX, Eclipse, VNC Viewer, XML Parsing etc.
* Involved in designing and developing the functionality and features using C++.
* Involved in the code and requirement reviews of work products developed by team members.
* Data base Enhancements for new customers and departments/divisions.
* Writing stored procedures in SQL Server and integrated into the application to access the customer's calls, department's data from databases and store the customer's calls, department's data into database.
* Preparation of Unit test cases and execution of test cases.
* Porting of application from Windows to Linux.
* Developed and executed User Acceptance Testing portion of test plan.
* Worked on creating various documents that include Use Cases, Class Diagrams, Sequence Diagrams and Activity Diagrams.
* Developed, coded, tested, debugged and deployed webservices, MQ for the input and output forms on the webservices.
* Review of design document, code and test case documents.

**Skills Used:** C, C++, STL, QT Frame work, CVS, OOPS, DBX, Linux, GCC Compiler and Perl Scripting, WinDbg, SQL Server 2005, Windows Services, Perl Scripting, Boost C++ Library.

**Education:**

Bachelor of Engineering in Computer Science and Engineering (BE - CSE)

Anna University, Chennai, TN, India