

COMPUTER SCIENTIST

Summary

Experienced Software Engineer offers ten years of complete software development lifecycle expertise in the software industry.

Highlights

C, C++, C#, Java, JavaScript, and Python), proficiency with multiple development tools (Eclipse, Visual Studio, PyScripter), and software development experience on Linux, Windows, and Mac OS platforms. Currently employed as a Computer Scientist for US Army Corps of Engineers. C, C++, C#.NET, ASP.NET, Java, and JavaScript. *Integrated Development Environments used: Visual Studio 2013, Eclipse, PyScripter, Brackets. *Document Preparation Software used: Visual Studio.NET, MPI, Microsoft VISIO (UML), LaTeX.

*Telecommunications Protocol Experiences: LAP-D, SAAL, V5.1/V5.2

Experience

Computer Scientist

June 2008 to Current Gap Solutions, Inc

- Primary Responsibilities: Primary Responsibilities: Design, develop, test, maintain and provide customer support for a range of USACE software systems including: Development of a pattern detection system to detect facility resource usage trends in Smart Buildings (both residential and commercial).
- Maintained and improved the Corps of Engineers Bridge Information System (CEBIS).
- I am also involved in benchmarking activities for new equipment acquisitions for Department of Defense Shared Resource Center (DSRC).

Senior Software Engineer

January 1998 to July 2002 Pega (Pegasystems Inc.)

- Designed, developed, tested, released, maintained and provided customer support and customer training for real-time telecommunications protocol software products conforming to telecommunications standards published by ITU-T and ETSI standardization organizations.
- The published standards define protocols used at different layers of the seven ISO/OSI layers.

Graduate Research Assistant

August 2003 to May 2008 Purdue University

- Assisted several faculty members with research in the High Performance Computing area.
- Software Development Experiences - Professional: As the Principal Software Engineer I have developed custom AutoCAD palettes using AutoCAD .NET API for Virtual Forward Operating Base (VFOB).
- The palette holds the different blocks that may be dragged and dropped onto the AutoCAD drawing canvas.
- DCAM: As the Principal Software Engineer I have redesigned, restructured, and developed the Detailed Component Analysis Module (DCAM) of the VFOB software.
- The original DCAM was developed using monolithic ad hoc structure.
- I have redesigned the module by adopting object-oriented paradigm.
- LCM: As the Primary Responsible Engineer I have developed a software module for sensor data analysis and prediction to support the unified building information modeling (BIM) framework for sustainable, mission-ready facilities.
- The BIM framework provides a facility control lifecycle model that allows comparison between expected and actual facility usage and detect any usage anomalies thereof.
- The developed software implements a Cluster Analysis algorithm for comparing and identifying patterns in historical sensor data.
- It also implements the Fast Fourier Transformation (FFT) for noise reduction in the data.
- As the Primary Responsible Engineer I have designed, developed, and successfully released the V5.1/V5.2 (V Interfaces at the digital Local Exchange to support Access Networks) protocol software product.
- I have used C and C++ for development.
- I have tested and validated the V5.1/V5.2 product for quality acceptance and conformance to the ITU-T standards.
- I used proprietary scripting language for testing conformance.
- I have provided post-release maintenance (bug discovery, patch generation etc.) and customer support.
- The product is used to establish, maintain and control communication between telephone Access Networks and Local Exchanges.
- The corresponding specifications describe both OSI layer 3 (network layer) and 2 (data link layer) protocols.
- Both protocol software products were developed during the same product lifecycle.
- As the Primary Responsible Engineer I have re-engineered and modified the LAP-D (Link Access Procedure for ISDN D-channels) and SAAL (Signaling ATM Adaptation Layer) protocol software source codes to upgrade the products from dysfunctional code bases and released them as full-featured and stable products, resulting in an overall increase of more than 50% in sales for both products.
- I used C and C++ languages.
- I have modified LAP-D and SAAL source code to support their use in Fault-Tolerant/High Availability architecture, include provision of run-time debug control, and make extension of the products' management interface controls.
- I have tested and validated the LAP-D and SAAL products for quality acceptance and conformance to the ITU-T standards.
- I have provided post-release maintenance (bug discovery, patch generation etc.) and customer support to LAP-D and SAAL customers.
- Software Development Experiences - Research: As a research assistant at the Mississippi State University I have developed a resource management system for adaptive parallel applications for LINUX cluster environments using C++, TCP/IP Sockets, the POSIX thread library, and the C++ Standard Template Library.
- Designed and developed a LINUX based NIC module for the Myrinet programmable M3M-PCI64B NIC and the embedded Myrinet Control Program (MCP) for the LANai 9 RISC processor of the NIC.
- The MCP is developed using the LANai Tools version 2.95.2..1.6.

- Software Development Experiences - Academic: Developed a LINUX kernel module for driving the Standard Microsystems Corporation LAN83C171 Ethernet card using C.
- Developed a parallel Quicksort program using MPI, C++ and STL.

Education

M.S : Computer Science Mississippi State University i¼ State Computer Science

M.S : Computer Science University of Southern California i¼ City , State Computer Science

M.Sc : Computer Science University of Dhaka Bangladesh Computer Science

B.Sc. (Honors) : Applied Physics and Electronics University of Dhaka Bangladesh Applied Physics and Electronics

Skills

.NET, C#.NET, ASP.NET, Academic, acquisitions, ad, API, Army, ATM, AutoCAD, benchmarking, C, C++, canvas, customer support, data analysis, driving, Eclipse, Engineer I, Ethernet, Fast, drawing, ISDN, ISO, Java, JavaScript, LAN, LINUX, Mac OS, Access, C#, MCP, Exchange, Microsoft VISIO, Windows, modeling, network, Networks, NIC, object-oriented, OSI, PCI, POSIX, Programming, protocols, Python, quality, real-time, Research, sales, scripting, Sockets, Software Development, Software Engineer I, TCP/IP, telecommunications, telephone, troubleshooting, UML, upgrade, validation, Visual Studio