Alexey Omelchenko

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SENIOR SOFTWARE DEVELOPER

OBJECTIVE

A challenging position that can utilize and further sharpen my expertise in development of high-performance enterprise-level software

SUMMARY

- Over 15 years of software development experience.
- Strong experience in design and development of enterprise systems.
- Experience as a team lead of applying software development concepts and supporting live systems.
- Expertise in application performance analysis and optimization.
- Excellent understanding of object oriented programming concepts and implementing them on C#, C++, Java and Python.
- Proficiency in industry standard libraries and technologies.
- Strong skills in cross-platform distributed software development on Windows and Linux.
- Comprehensive knowledge of data modeling on physical and logical levels.
- Over 6 years of software systems development for major financial institutions in USA and Europe.
- Understanding of banking, investment, and financial services industry needs and transactions.
- Excellent problem solving skills.
- Excellent communication and interpersonal skills, leadership and teamwork.

SKILLS

Programming languages: C#, .Net, C++, Java, Objective-C, SQL, Python, Perl
Libraries & technologies: Tibco RV, Syncfusion, STL, Boost, Win32 API, MFC, ATL, WTL, COM, Intel TBB, FIX, ZeroC ICE, ZeroC Ice, P/Invoke, JNI, Posix
Architecture & design: UML, Design Patterns
Web technologies: HTML, XML, XSLT, CGI, SOAP, REST
RDBMS: Oracle Database, MS SQL Server, MySQL, Sybase ASE
Software platforms: Windows, Linux, Solaris
Development tools: MS Visual Studio, Git, CVS, SVN (Subversion), Clearcase, Source Safe, GCC, PyCharm, IntelliJ IDEA, NUnit, Junit, Jira
Performance tools: Intel C++ Compiler, Intel Performance Libraries, Intel VTune
Hardware platforms: x86, x86-64 (AMD64), Itanium, XScale
Virtualization: VMware, Xen, OpenVZ
Development process: Agile, Iterative methodologies, Scrum, TDD, FDD, PSP, TSP, XP

EXPERIENCE

July 2013 – Present, Senior Software Engineer, NCBI (www.ncbi.nlm.nih.gov), Washington D.C. Metro Area

System: NCBI Authentication System
A Federated Authentication System which integrates authentication systems from hundreds of universities all over US as well as NASA, Google, PayPal and others. Core component of the system is deployed in similar organizations in Canada, UK and Korea. The system is implemented as a set of modules written in C++, C# or Python. Core components are multithreaded and cross-

platform and can be built on Windows and Linux. The system processes 20 million transactions per week.

- Assumed responsibility for the authentication system development and engineering support.
- Worked with multiple scientific and engineering teams to implement NCBI authentication for their projects.
- Redesigned Database Layout to improve performance of the system.
- Improved reliability of the system through analysis of performance bottlenecks, memory management issues, opportunity for data caching.
- Implemented several modules from scratch.
- Communicated to dozens of institutes' IT services to establish new or repair/upgrade existing integrations with NCBI authentication.
- Worked with UK, Canada and Korea teams to adapt their installation of the system and help with data migration.
- Implemented automated monitoring and statistics reporting, ensured the system stability.

Environment: .Net, Posix, C#, C++, Python, STL, Boost, MS SQL Server, SVN, Git, SOAP, Pthreads, gcrypt, OpenSSL, Jira, OAuth, SAML, CGI, FastCGI, Windows, Linux

December 2010 – July 2013, Lead of Development Team, Otkritie (www.open.ru/en/), Moscow, Russia

Systems: Internet Banking, SugarCRM, OTRS, CreditRegistry, Accounting System, SMS Information Service

A set of systems designed for needs of Bank's corporate clients and VIP oriented business. Different systems are integrated. Some services are written from scratch, another modified and adapted from open source projects.

- Headed development and integration of in-house enterprise level information systems and open source solutions.
- Designed and implemented a .Net framework for internal system services development, it includes service management, logging, unified configuration management, communication layer.
- Developed SMS Information Service – C# Windows Service, robust, fault tolerant, that notifies recipients about events in various information systems through SMS.
- Participated in integration of an external Internet Banking System and our internal Accounting System – determined format and data structure of documents, UML.
- Developed an integration service for transformation of file-based requests on Windows server into remote shell scripts calls on Unix-based server, transformation of asynchronous requests to synchronous processing was implemented, C++ multithreaded client-server.
- Developed robust file delivery service in Python – to ensure that file from a local folder will be delivered to a remote location even in case of temporary network problems – the service is important for systems integration implemented through file exchange.
- Participated in customization of SugarCRM to internal needs – set of integrations and custom improvements for the systems: Internet Banking, Accounting System, Analytic System and United Data Storage.
- Implemented real time performance monitoring for business critical systems using Nagios.
- Obtained solid knowledge of corporate banking services.

Environment: C#, C++, Python, Perl, PHP, STL, Boost, Oracle, MS SQL Server, MySQL, SVN, ZeroC ICE, NUnit, CppUnit, UML, Redmine, Windows, Linux

June 2009 – September 2010, Senior Software Developer (AVP), Deutsche Bank (db.com), Moscow, Russia

Systems: ARIS, Score

Two automated risk management systems that valuate more than 1M trades daily. They are written in C#, use external risk engine written in C++, running on DataSynapse grid. DBMS – Oracle. For some types of reports FireBird is used.
They are deployed to 2 Citrix boxes, 10 application servers and pool of 3k DataSynapse engines.

- Supervised system development as technical owner.
- Delivered 4 major releases of the systems without issues.
- Implemented a number of new reports.
- Implemented permissions system for books of trades and reports.
- Developed automated regression testing of critical reports in collaboration with testing team.
- Coordinated work of development team in Moscow and business in London, Singapore and South America.
- Obtained knowledge of valuation of asset derivatives - FX, Money Market, FI, IR Swaps.

Environment: C#, C++, STL, Boost, Python, Oracle, DataSynapse, SVN, UML, Jira, Confluence, Windows

October 2007 – June 2009, Senior Software Developer, UBS (ubs.com), Moscow, Russia
System: Termi
Solution designed for securities trading, pricing, order management, trade audit and much more. It is used for trading of different derivatives. Termi is composed of a large number of processes; a huge number of batch jobs, scripts and cron jobs; and at least 3 databases.

- Transferred ownership of the system from another external team in 1.5 months.
- Organized team knowledge transfer.
- Supported the system until its total decommission.
- Assisted in step-by-step migration of dataflow into another new systems.
- Maintained legacy code in C, C++, Objective C, Perl, C Shell.
- Fixed a number of defects in source code.
- Implemented a number of stubs and connectors for new systems integration.
- Obtained knowledge of pricing of FI, FX derivatives.

Environment: C++, C, Objective C, Perl, FIX, TCP/IP, Socket, Crontab, UML, Oracle, Sybase, MS SQL Server, C Shell, Jira, Confluence, Solaris
System: Ultrabond
Solution for Mortgage-Backed securities data analysis designed as client-server software. Client side has Excel-like interface with tables, figures, charts and support of data import and export to common formats. Platform: C#, Windows. Server side is distributed scalable computing system with single front-end and multiple back-ends, written in C++ for Solaris and Linux. Communication layer is Tibco Rendezvous and ZeroC ICE.

- Participated in planning and development of many small to medium projects.
- Added support of new external data feed – an external database, Oracle.
- Developed Perl script for conversion and import of historical data form a set of files.
- Ported server side software for Windows – the code became cross-platform – Linux, Windows.
- Implemented general cache server using C# and .Net Framework.
- Obtained knowledge of valuation of fixed income and in particular Mortgage-Backed securities

Environment: C#, C++, Perl, STL, Boost, Threading, Syncfutsion, Tibco RV, ZeroC ICE, Sybase, Oracle, CppUnit, NUnit, Clearcase, UML, Jira, Confluence Linux, Windows, Solaris

August 2006 – October 2007, Senior Software Developer, CQG (cqg.com), Moscow, Russia
Product: CQG for Windows
Solution for all professional trader needs. It includes market coverage for futures, options, fixed income, foreign exchange, equities and indexes. It incorporates several different interfaces – depth-of-market order book views, charts, spreadsheets.

- Guided development team of 4 people as a team lead.

- Performed performance analysis of the application, found several sources performance bottlenecks.
- Delivered 3 projects from 2 to 3 month length.
- Designed event based data provisioning for multithreaded user interface.
- Implemented new feature – Greeks values on depth-of-market trading interface – one additional column with corresponding valuated numbers – ActiveX control.
- Implemented interface improvement – Study Values on depth-of-market – every analytic curve on chart view that has value in price units can be shown on price column of DOM trading interface – ActiveX control.
- Applied a set of well-known Design Patterns.
- Performed reviews of source code written in C# and C++ for my team and some others.
- Obtained solid knowledge of standard development process – CMMI, PSP, TSP, Scrum.
- Obtained remarkable knowledge of financial market terminology and business processes.

Environment: C#, C++, COM, ActiveX, STL, Boost, WTL, MFC, CVS, UML, Windows

December 2004 – August 2006, Software Developer, ABBYY (abbyy.com), Moscow, Russia
Product: ABBYY Recognition Server (http://www.abbyy.com/recognition_server/)
Server-based OCR solution for automated document processing designed for high volume workload with transparent scalability and fault tolerance.
- Designed and implemented GUI management console for the server.
- Improved scalability for huge-size multipage documents processing.
- Ported OCR Engine from Windows to Linux.
- Implemented system layer API emulation for Linux.
- Developed compiler of Windows resource file language.
- Obtained significant knowledge of Win32 API and COM technology.
- Released first version of the Recognition Server.

Environment: C++, STL, MFC, ATL, COM, RPC, MMC, Windows Service, VSS, UML, Windows, Linux

March 2001 – November 2004, Software Developer, Intel (intel.com), Nizhny Novgorod, Russia
Product: Intel Performance Libraries (http://software.intel.com/en-us/articles/intel-ipp/)
Highly optimized cross-platform software functions for multimedia, data processing, and communications applications.
- Obtained outstanding experience in software performance analysis and optimization.
- Implemented and highly optimized diverse functions for processors: Pentium 4 and Itanium.
- Implemented algorithms for matrix processing, video processing, cryptography, big number arithmetic, XML processing.
- Participated in delivery of 4 major releases of Performance Libraries.
- Performed competitive performance analysis of MySQL engine built with GCC vs. Intel C++ Compiler. That was done for joint project of Intel Compiler team & MySQL.
- Designed several libraries including cryptography and XML processing.
- Acquired deep knowledge of cross-platform software development.
- Investigated new technology – .Net – using open source implementation from Microsoft.
- Proposed a set of improvements for .Net Framework that highlight Intel performance values.
- Coordinated team work of 4 developers.
- Honored with a Very Special Thanks Award.

Environment: C, C++, C#, Java, P/Invoke, JNI, Assembler, VSS, CVS, StarTeam, BitKeeper, NUnit, JUnit, Rational Purify, Intel VTune, UML, Windows, Linux, Agile, XP

EDUCATION & SERTIFICATIONS

2008 – C++ Programming, International Knowledge Measurement, Score 99%
2001 – MS in Physics, Moscow Institute of Engineering Physics (MEPhI), Russia

EXCELLENT REFERENCES AVAILABLE UPON REQUEST