

# Alexey Omelchenko

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## TECHNICAL DIRECTOR | ARCHITECT

### SUMMARY

- Technical leadership on complex software projects.
- Excellent decision-making and problem solving skills.
- Ability to find better solution.
- 6 years in Development Management and Senior Management roles.
- 10 years in lead developer roles with primary OOP languages C++, C#.
- 18 years in Software Development / Engineering.
- Expertise in Enterprise Software planning, development and support, full Product Life Cycle.
- Modern development practices: Git, Jira, TDD, ATDD, CI/CD, Secure Coding.
- Supervision of secure development standards.
- Very Positive experience with the Business in banking, investment and financial services.
- Deep understanding and employment of the fundamental principles of Agile Development.
- Budget Planning and Risk Management.
- Excellent communication and interpersonal skills, leadership and teamwork.

### SKILLS

Process management skills: Agile, Scrum, TDD, ATDD, FDD, XP;

Business relationship, Resource management, Issue management, Change management;

Technical ownership of complex business-critical systems which involved hundreds processes and services, multiple databases;

Business ownership Investment Banking Systems, Online Banking, CRM, Request Tracking System;

Quality management, Functional/Acceptance Testing, Load Testing, Monitoring, Maintenance;

Leadership, effective communication and interaction, knowledge management, trainings;

Hiring, Conflict management, Motivation, Annual employees' assessment and promotion.

Deep understanding of principles necessary to create robust, secure, scalable software systems;

Security tools and standards, Veracode, SonarQube;

Programming languages: C++, C#, SQL, Python;

Architecture & platforms: PCF, Linux, Windows, NoSQL, Redis, Aerospike, Messaging, MQTT, Solace, RabbitMQ;

Web technologies: Asp.Net Core, HTML, XML, XSLT, PHP, LAMP;

Source Control: Git, SVN (Subversion), CVS, TFS, Clearcase.

### EMPLOYMENTS

Charles Schwab, National Institutes of Health (NIH)/ National Center for Biotechnology Information (NCBI), Bank Otkritie (Moscow), Deutsche Bank, UBS, CQG, ABBYY, Intel.

## EXPERIENCE DETAILS

### **2016 – Present, Technical Lead, Charles Schwab ([www.schwab.com](http://www.schwab.com)), Austin, TX**

Systems: About 60 existing middleware applications, new Enterprise Messaging Bus based on Solace solution, new Rate Quotes provider service, new Document Ingestion Utility – a project for business process automation.

- Designed and implemented multiple modules for the new Enterprise Messaging Bus;
- Lead several teams in the Messaging Bus onboarding process; helped them to achieve their functional and performance goals;
- Implemented automated CI/CD pipeline for the Bus using BitBucket, Bamboo and PowerShell scripting;
- Worked with product owners and business representatives to find acceptable design solutions;
- Worked with vendors to ensure delivery of necessary product features;
- Ensured following to the corporate architectural guidelines of multiple projects;
- Analyzed performance challenges, optimized messaging solutions, improved overall performance by 100x times;
- Implemented multiple RESTful services that provide financial data for Schwab trading web platform and mobile applications;
- Lead a distributed team of nine people;
- Mentored developers in multiple teams to achieve better coding practices;
- Supervised as a security expert standards for department of ~50 people;
- Interviewed and hired middle to senior level candidates.

Environment: C#, MS SQL Server, Git, JIRA, Confluence, BitBucket, Bamboo, Veracode, Windows, Linux, PCF, RabbitMQ, Solace, Redis, Aerospike, Asp.Net Core, OAuth, TDD, ATDD, Scrum.

### **2013 – 2016, Software Development Engineer, NCBI ([www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)), Washington, D.C. Metro Area**

System: NCBI Login

An authentication system for NCBI and similar organizations in Canada, UK and South Korea. It allows users to authenticate with their federated accounts from hundreds of institutes and agencies all across US. Normal system load ~20 million requests per week, ~6 million registered users.

- Took responsibility for Authentication System, implemented multiple improvements;
- Worked with dozens of institutes' IT services to set up integration with NCBI authentication;
- Optimized performance and improved reliability of the system;
- Worked with institutes in UK, Canada and Korea on projects to deploy and adapt instances of NCBI Login System for their needs;
- Replaced several components of the system that did not satisfy requirements for security, maintainability and monitoring, handled several brute force attacks from the Internet;

Environment: C++, C, Python, MS SQL Server, Git, JIRA, Confluence, Windows, Linux, OAuth, SAML.

### **2010 – 2013, Head of Corporate Business Technology, Bank Otkritie ([www.open.ru/en/](http://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 zero, another modified and adapted from open source projects.

- Headed development, integration and support of all information systems of Corporate Business Department. Reported to Vice President of the Bank;
- Worked as an interface between IT and Business departments;
- Lead a project to implement CRM system for Corporate Business from the beginning until successful completion;
- As head of department successfully implemented several analytical and reporting systems;
- Lead multiple projects and organized interactions between key departments to resolve business tasks, represented the business in IT;
- Established real time monitoring of business critical infrastructure using testing frameworks and the Nagios monitoring system;
- Supervised development of SMS Information Service;
- Headed successful integration of old Online Banking System and a new one. Daily workload ~100,000 documents, ~30,000 corporate clients;
- Improved Online Banking system stability making it most stable information system in the Bank;
- Designed and supervised implementation of a framework for internal services development: unified service management, logging, configuration management, communication layer. It served as platform for five different components processing ~50,000 transactions daily with uptime of ~6 months;
- Led continuous efforts to optimize response time of SugarCRM. It improved from 2 – 10 seconds to less than 1 second while number of users increased from 200 to 3000;
- 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, Agile.

**2009 – 2010, Manager of FX Market Team (AVP), Deutsche Bank ([db.com](http://db.com)), Moscow, Russia**  
Systems: ARIS, Score

Two automated risk management systems that value 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 were 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 new reports;
- Lead development of automated regression testing of critical reports;
- Coordinated work of development team and businesses in multiple locations;
- 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

**2007 – 2009, Technical Team Lead, UBS ([ubs.com](http://ubs.com)), Moscow, Russia**

System: Termi, Ultrabond

Solutions designed for securities trading, pricing, order management, trade audit, Mortgage-Backed securities data analysis and much more; used for trading of different derivatives; composed of a large number of processes; a huge number of batch jobs, scripts and cron jobs; and at least 3 databases; communication layer was Tibco Rendezvous and ZeroC ICE.

- Managed system ownership transfer from an external team under time constraint of 1.5 months;
- Supported Termi system until its total decommission;
- Assisted in step-by-step migration of dataflow into new systems;
- Ported server side software for Windows – the code became cross-platform – Solaris, Linux, Windows.

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

**2006 – 2007, Senior Software Developer, CQG ([cqq.com](http://cqq.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 indices. It incorporates several different interfaces – depth-of-market order book views, charts, spreadsheets.

- Guided development team of 4 people as a team lead;
- Analyzed performance of the application, optimized its bottlenecks;
- Designed and implemented new GUI improvements;
- Obtained knowledge of financial market terminology and business processes.

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

**2004 – 2006, Software Developer, ABBYY ([abby.com](http://abby.com)), Moscow, Russia**

Product: ABBYY Recognition Server ([http://www.abby.com/recognition\\_server/](http://www.abby.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;
- Developed compiler for Windows resource file language;
- Released first version of the Recognition Server.

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

**2001 – 2004, Software Developer, Intel ([intel.com](http://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 optimized library functions for Intel processors: Pentium 4, Itanium, XScale;
- Implemented algorithms for matrix processing, video processing, cryptography, big number arithmetic, XML processing;
- Performed competitive performance analysis of MySQL engine built with GCC vs. Intel C++ Compiler for joint project of Intel Compiler team & MySQL, improved performance of MySQL on their benchmarks by 30%;
- Acquired deep knowledge of cross-platform software development;
- Obtained important experience of working in a global organization and performing to its corporate values;
- 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, PVSC Tracker, Agile, XP

**EDUCATION & CERTIFICATIONS**

2001 – MS in Physics, Moscow Institute of Engineering Physics, Russia

EXCELLENT REFERENCES AVAILABLE UPON REQUEST