

# Nikolai N. Fetissov

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June 27, 2009

## Summary

Software Engineer with more than 10 years of experience designing and developing object oriented systems and frameworks. Strong knowledge of C and C++. Sockets and threads programming. Focus on clean, well-documented, debuggable, efficient, and secure code. Good understanding of core TCP/IP, Internet infrastructure protocols (DNS, IPSec), and application protocols such as HTTP. Experience with systems and network administration. Understanding of Internet application security requirements.

Looking for exciting and challenging work.

## Skills

- *Languages:* C, C++, Tcl, Perl, also C#, Java, JavaScript, Python.
- *Databases:* Oracle, PL/SQL, PostgreSQL, Sybase, MS SQLServer.
- *Tools and Libraries:* gcc, TIBCO Rendezvous, SunStudio, VisualStudio, dbx, gdb, make, nmake, valgrind, oprofile, gprof, yacc/lex, CxxTest, Doxygen, L<sup>A</sup>T<sub>E</sub>X, cvs, STL, Boost, pthreads.
- *Platforms:* UNIX (BSD, Linux, Solaris), Windows.

## Experience

### **Pipeline Trading Systems LLC, New York, NY. August 2008 to present**

#### **Senior Software Engineer**

Developing and maintaining trading system infrastructure libraries and tools. C, C++, TIBCO Rendezvous, Perl, PostgreSQL, Red Hat Linux, Boost libraries, CxxTest, cvs, quickfix, FIXForge.

- Maintaining and improving foundation libraries and tools, analyzing performance impact of low-level design choices, profiling critical execution paths, introducing unit test tools, auditing code base for international markets support.
- Refactoring C++ wrapper libraries around TIBCO Rendezvous multicast messaging framework reducing lock contention, memory and processing footprint, and minimizing latency.
- Converting parts of the trading system from existing file-based message transport to network communications facilitating distributed deployment.

**Thomson-Reuters, New York, NY. August 2007 to August 2008****Senior Software Engineer**

Designing and developing low-latency high-throughput news headend systems. C, C++, Sybase, Sun Solaris, Solace publish-subscribe messaging, FAST search engine. STL, Boost, ACE, SunStudio, gcc, gsoap, CxxTest.

- Designed and developed C++ template-based library for unification of synchronization and concurrency APIs across projects. The library includes full API unit test coverage. Extended the library with simplified network communications and event demultiplexing facilities aimed at replacing aging ACE frameworks.
- Refactored existing news processing framework for publishing into Solace messaging infrastructure targeted to algorithmic trading consumers. Produced UML diagrams documenting architecture and design. The implementation surpassed competing offerings in terms of speed and reliability. Designed multi-node automatic failover protocol.
- Designed and developed robust master-slave news store synchronization service allowing for close to real-time correction of news transmission errors and omissions.
- Developed multiple web-service client prototypes for testing beta offerings of news processing services such as auto-categorization and entity extraction.
- Coached team members on secure C/C++ coding, safe memory management, applying design and concurrency patterns, and using modern C++ design techniques.

**McKesson Health Solutions. Norwalk, CT. November 1999 to August 2007****Senior Software Engineer**

C, C++, Tcl, C#, Java, Oracle, Web-Services. Microsoft Windows and Red Hat Linux platforms.

- Lead project aimed at optimizing in-house rules engine performance. Analyzed utilized algorithms and data structures. Implemented new rule code generator back-end for producing optimized C++ instead of interpreted code. Designed and implemented cross-platform core rules engine library. Windows, Linux, C++/Tcl, STL, Boost.
- Designed and developed a web-based workflow framework. The system features multi-threaded event backbone, XML workflow definition language, flexible routing and assignment policies, and configurable access control. Deployed several application components such as employee time-tracking, development workflow spanning from change request to release build integrated with source code control. Automated several business processes such as operational metadata verification and deployment for company health insurance claim adjudication and audit service.
- Developed several modules for integrating company claim audit software with third-party services. Implemented wrappers in Tcl/Tk, integration components in CORBA/C++ and C with TCP sockets.
- Developed multiple batch data-mapping tools with lex, yacc, and C.
- Designed and developed PGP-based secure referral protocol for authorized linking from partner sites.

**Systems and Network Administrator, PeachIsland Engineering, LLC. Norwalk, CT. November 1999 to March 2006, part-time**

OpenBSD, Linux, Mac OS X, Windows XP/2003. Network design, firewalls with pf, traffic prioritization with altq, DNS, DHCP. VPNs with OpenBSD. RedHat and Gentoo Linux. Single Sign-On with Kerberos and PAM. File-sharing with Samba, NFS, and WebDAV on Apache. Backups. Shell scripting.

**ECCubed Inc. Wilton, CT. October 1997 to October 1999****Senior Software Engineer**

Java, C++, Oracle. Microsoft Windows and Sun Solaris platforms.

- Designed and developed Java component libraries for e-commerce web integration including data aggregation and filtering, network communications, and XML streaming. Windows, Solaris.
- C++ wrappers for CORBA interoperability. Solaris.
- Led a team of five developers. Took over the architecture of 'ecDataBuilder' product.

**Telesoft Joint Venture. Moscow, Russia and Rome, Italy. July 1995 to August 1997****Senior Software Engineer / System Analyst**

C, Java, Oracle, and Cobol/CICS/DB2. Windows, MVS, HP-UX, AIX platforms. Business systems for Telecom-Italia.

**Metropol Bank, Moscow, Russia. 1994 to 1995****Programmer/Analyst**

C, Microsoft SQL Server, Windows. Designing and implementing statistical algorithms for stock trader decision support.

**Laboratory of Wave Dynamics, Moscow State University, Moscow, Russia. 1993 to 1994****Intern Programmer**

C, SGI IRIX. Implementing algorithms for simulating shock wave propagation, and graphics algorithms for visualizing the experiments.

**Research Institute of Mineral Fertilizers, Moscow, Russia. 1991 to 1993****Intern Programmer**

C, HP-UX and GNU 32-bit environment for DOS. Implementing algorithms for numerical chemistry, indexed datasets and visualization algorithms (surface coloring, 3d shapes in perspective.)

**Education**

- Moscow State University, Moscow, Russia, 1995  
Degree in Mathematics and Applied Mathematics  
Major in Computational Mathematics
- Completed SANS (Systems Administration and Network Security) Institute 'SANS Security Essentials' course in 2005 earning GSEC Certification (GIAC Certified Professional 3205-Gold.)

**Professional Interests**

UNIX Operating Systems (OpenBSD, Solaris, Linux), Networking, Algorithms, Compilers, Design Patterns. NYC BSD User Group. [stackoverflow.com](http://stackoverflow.com). ACM.