

KHVOROV DMITRY

Mobile phone: +65 90265669
e-mail: dmitry.khvorov@gmail.com
Skype: sammy_fr

OBJECTIVE

Looking for a position of Senior C++ Software Engineer/Team Lead

SUMMARY OF QUALIFICATION

I have more than 12 years of experience in commercial software development within different areas of computer science. I have been working on big projects on leading software developer positions and as a manager of a software development team.

- Excellent knowledge of C/C++, STL, boost. Knowledge of Python, Java, C#, different assemblers and SQL
- High skills in OOP/OOD technologies. Usage of modeling languages (UML, ER) for software design
- Big experience in development of multi-threaded and distributed applications for different platforms (Windows, Unix)
- Big experience in cross-platform development in C++ for Unix/Linux & Windows
- Working knowledge of different financial products and trading flow
- Big experience in embedded development for different platforms (ARM, AVR, secure chipsets for smart-cards). Good knowledge of working principles of different peripherals
- Excellent knowledge of working principles of Digital Television systems (DVB/MPEG) and Conditional Access systems for DTV
- Good knowledge of cryptographic algorithms and protocol. Experience in reverse-engineering for X86 platform
- Familiar with different tools for software development and software design
- Strong analytical skills and passion to work

SPECIALTIES

- Languages: C++03/11/14, C, Java, Python, C#, Erlang, bash, UML, XML, SQL
- Concepts: multithreading, network programming, low-latency, embedded applications, cryptography
- Programming paradigms: Design Patterns, Agile Software Development
- Databases: Sybase, MS SQL, MySql, Riak
- Technologies & standards: messaging buses (TIB/RV, AMPS, zmq), DVB, MPEG
- Protocols: TCP, UDP
- Operation systems: Linux, Windows

WORK EXPERIENCE

07.2011 – present time Bank of America Merrill Lynch, Singapore

AVP, Senior C++ Software Developer in InstinctFX (bank's institutional FX e-commerce platform) front office team (C++, Linux, multi-threading, low-latency)

- Current project - rebuilding order execution system and smart order router
- Implementation of new features for pricing servers for FX spot/forwards, swaps and options in C++. These features includes algorithms for computing prices for multiple client streams with distinct profiles for each client with high capacity (3000 client streams per process, 50000 per box), algorithms for protecting the system from harmful trading, market data errors etc.
- Optimization of server-side applications for speed and latency using in-house development tools (C++ for latency measurement and Python for analysis) together with industry standard profiling software (Intel VTune). Latency of FIX gateway has been improved from 6 ms to 250 us (Platinum Recognition Award in 2013 for that project).
- Design and development from scratch of cross-system API to integrate the trading platform (Instinct FX) with other systems from front and middle office. The project was fully developed on C++14 with automatic code generation for C++, Java and Python.
- Remediation of price aggregation engine and order execution engine to reduce amount of network traffic sent to client, decrease quoting latency and improve stability of liquidity aggregation platform. C++/Java was used for server side work.
- Development of latency measurement library in C++. Library can measure latency with microseconds resolution, can be easily injected to any component of the system and measurements very fast . Latency data is streamed to KDB database for analysis (Python).
- Development of high-throughput server for feeding data to middle-office system for analysis. All prices, quotes, trades from three regions (London, New York & Tokio) are fed to an instance of KDB database in real-time via AMPS message bus.
- Development of pricing server for NDF currencies and integration of NDF trades flow from FXALL multi-bank platform to Mercury FX
- Migration of C++ codebase to C++11/14, promoting new C++ features amongst colleagues
- Development of architecture for the regression testing framework which is used for black-box testing of system-wide business logic cases
- Providing support to business, problem solving

12.2009 – 06.2011

General Satellite Corp., Russia, St. Petersburg

Head of Device Development Department/Team Lead

- Main task for my department was development of devices, middle-ware and high-speed data processing applications for Conditional Access Systems for Digital TV. I used C++ for server-side on Linux and Windows, C for embedded devices and Assembler for some very low-level parts of the system.
- I was responsible for planning and control of projects development, reporting to top management of company, as well as development of architecture for business-critical projects
- The technology for additional protection of digital transport stream was developed and standardized. The process of integration of this technology into chipsets for

- digital TV set-top-boxes was standardized as well
- The technology for transport stream protection was integrated into the most used chipsets in the STB market (ST, Renesas)
- I've managed to improve development processes by introducing new agile development model, the Coding Conventions and documentation standards

01.2008 – 12.2009 General Satellite Corp., Russia, St. Petersburg

Senior Software Developer

- Development of a high-throughput cross-platform scrambler for MPEG transport stream. The scrambler is used by several Digital TV providers in Europe and Russia for protection of the content. (C++, Windows/Linux, multi-threading, networking)
- Development of firmware for a CI module for decryption and viewing of HD video and audio streams. (C, Posix)
- Development of security smart-cards for Conditional Access System DRECrypt and PROCrypt. I was responsible for development of software architecture, planning, negotiations with foreign vendors of micro-controllers, analysis of security and software development (embedded C)
- Development of the personalization system for smart-cards. I was responsible for development of system's architecture (3 layers – end-user software, middle-ware & business logic, database server), planning, tasks management and programming (C++, Linux, SQL, networking, multi-threading).
- Development of a "black-box" encryption device for network traffic processing. The client library for communication with the device was developed as well. The device encapsulates all cryptographic routines and used as the main encryption engine in CAS system on the provider side. (embedded C, C++ on client side, networking)

08.2004 - 01.2008 General Satellite Corp., Russia, St. Petersburg

Software developer

- Development of the software for digital satellite and terrestrial receivers (user interface, OSD, antenna and positioning management system) (C, assembler)
- Integration of different Conditional Access Systems into General Satellite's receivers (C, assembler)
- Development of distributed system for delivering decryption keys for an encrypted content (C++, Linux/Windows)
- Development of hardware true random numbers generator and a client library for it (embedded C, C++)

07.2003 - 02.2004 "Krasnaja Zarja" Factory, Russia, St. Petersburg

Software Developer

- Development of drivers for HDLC and HSCX communications protocols for message passing between blocks of automatic telephone station (embedded C)
- Development of drivers for communication between standalone devices of automatic telephone station (embedded C)
- Writing technical documentation

09.2002 - 09.2003

“Rubin” Scientific Research Institute, Russia, St. Petersburg

Software developer

- Development of a GUI tool to restrict access to network resources for different users (C++, Linux, Qt)
- Administration of mail servers, NNTP server, WEB and FTP server
- Contributing to the VOIP project

08.2001 - 07.2002

“Night bird” LLC, Russia, St. Petersburg

Software Developer

- Development of firmware for PCI board which is used in the home automation system “Terminus” to monitor and collect data from sensors (embedded C, x86 assembler)
- Development of software for different sensors of home automation system
- Development of testing applications
- Writing technical documentation

EDUCATION

- 2000-2006 - Saint-Petersburg State Technical University

Radiophysics faculty, Radiotechnic and Telecommunications department
Engineer degree

Theme of the graduate thesis is “Modeling and research of low-frequency filters based on current conveyors and switching capacitors”

- 2010 – Project management, www.teamlab.ru

One-week training on project management.

LANGUAGE SKILLS

Russian - native, English - fluent

PERSONAL

Date of birth	23 April 1983
Residence	Singapore
Nationality/Citizenship	Russian