Yury Trofimov

Software Architect | Senior Software Engineer

C++ Specialist | Distributed, Desktop and Embedded Systems

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PROFESSIONAL SUMMARY

Software Architect and Senior Software Engineer with 30 years of experience delivering complex distributed systems, embedded platforms, and industrial control software. Deep expertise in C++11/14/17, Windows / Linux, client-server architecture. Proven track record across medical devices, energy management, CAD/CAM and telecommunications. Currently seeking a challenging architect or senior developer role in a modern engineering environment.

CORE COMPETENCIES

- Software Architecture & System Design
- C++ (11/14/17) - 25+ years hands-on
- Client/Server & Distributed Systems
- Embedded Systems (efus, Raspberry Pi, ESP32)
- OPC / COM/DCOM / CORBA
- Data and Markup languages: XML, XSLT, XAML, HTML, JSON
- Database Design (Oracle, MS SQL Server, SQLite)
- Python, C#, Java, Shell scripting
- Medical products software (IEC 62304 context)
- Agile / Scrum team collaboration
- CI/CD: Git, Jenkins, TeamCity
- IoT: Home Assistant, YAML, MQTT, Zigbee
- Technical documentation & specifications

PROFESSIONAL EXPERIENCE

Software Architect & Senior Software Developer | ICU Medical Germany GmbH

June 2022 – May 2026 • Lüdenscheid, Germany

Driving architecture and development of embedded software for PharmAssist™ and Diana™ peristaltic pump modules used in IV medication preparation in clinical environments

- Designed multi-module software architecture for Windows CE (Compact 2013) embedded platform
- Led proof-of-concept work for new technologies and integration solutions, reducing integration risk
- Implemented reusable XAML UI component library adopted across all software modules
- Designed and generated customer/region-specific FDA-compliant drug databases in Python and VBA
- Architected CAN bus communication interface between software modules and firmware
- Delivered full Unicode migration, replacing legacy ANSI string handling throughout the codebase
- Developed system communication with Zebra printers/scanners
- Engineered and prepared software for porting to a global Linux Buildroot company platform

Technologies: C++, XAML, Silverlight for Windows Embedded, Python, VBA, SQL (SQLite), Zebra SSI/ZPL, Visual Studio 2013/2015, Windows CE Compact 2013, Linux Buildroot, Perforce, Git

Software Developer - CAD/CAM Systems | Tibek CNC-Technik GmbH
July 2021 – January 2022 • Düsseldorf, Germany

- Developed C++17 features for SmartWOP CNC furniture construction software
- Introduced and integrated XML-based data format for supplier catalog exchange
- Implemented X-axis GUI mirroring and custom interfaces for furniture/fittings configuration

Technologies: C++ (11/14/17), XML, SQL, pugixml, SOCI SQLite3, Visual Studio 2013/2017, JetBrains TeamCity, Subversion

Independent Software Consultant & Architect | Self-Employed
March 2020 – June 2022 • Düsseldorf, Germany

- Designed and built IoT software/hardware platform for Smart Home automation using Raspberry Pi, ESP32, and industrial sensors
- Ported and configured firmware for Zigbee coordinators and integrated cloud-integration tools for Xiaomi/Aqara sensors
- Developed a Telegram Bot to control home automation systems remotely

Technologies: Python, C++, Bash, Home Assistant, YAML, Zigbee, Wi-Fi, Raspbian/Armbian, Raspberry Pi 2/3+/4, ESP32

Senior Software Developer | Excellence AG (client: Prosoz Herten GmbH)
November 2019 – February 2020 • Düsseldorf, Germany

- Ported legacy Visual Basic codebase to modern C++ for OPEN/PROSOZ social welfare management platform
- Developed Python automation tools to accelerate migration and reduce manual effort

Technologies: C++, Visual Basic, Python, COM, XML, Visual Studio 2017/2019, Git, Subversion

Senior Software Developer | BTC AG / PSI Software AG
June 2015 – August 2019 • Berlin, Germany

- Developed C++11/14 features across GUI, topology, image processing, data import/export, and archiving for the PRINS real-time process control system
- Built Eclipse Xtext-based code generator (Java/Xtend) for automatic generation of service-oriented interfaces from DSL specifications
- Developed oPRINS remote/web visualization module

Technologies: C/C++ (11, 14), Java, C#, Shell scripts, Xtend, Boost, MFC, SQL, XML, RabbitMQ, Oracle, MS SQL Server, Visual Studio, Eclipse, Windows 7/10, CentOS 7, Git, Jira, Jenkins

Software Consultant & Architect | RWE IT GmbH
November 2010 – September 2013 • Essen, Germany

- Architected and developed TAD/SAP-VE client/server application suite for data management in power stations
- Designed Oracle database schemas; led migration to Windows 7/SmartClient platform

Technologies: C++, MFC, PL/SQL, XML, ODBC, ADO, Oracle, Visual Studio 6/2010/2012

IT Consultant | Vodafone Group
February 2006 – September 2009 • Düsseldorf, Germany

- Integrated Google and FAST search into Vodafone Live! R9 platform across 15+ countries
- Integrated FAST search into Sony Music platform
- Developed monitoring, KPI, reporting and analytical tooling using Java, shell scripts, SQL, and PL/SQL
- Provided 3rd-level support and led deployments in multi-country production environments

Technologies: Java/J2EE, XML/XSLT, Shell scripts, SQL/PL/SQL, JBoss 4, Oracle 9i, Apache, Ant, Subversion, BMC Remedy, Sun Solaris

Software Engineer | Ricoh Europe B.V.
November 2004 – August 2005 • Düsseldorf, Germany

- Architected scalable middleware software connecting Ricoh Multi-Function Printers (MFP) with enterprise document management platforms for high-value European B2B clients
- Engineered multithreaded network components that utilize TCP/IP, SMTP, SNMP and RIP protocols to facilitate real-time MFP communications
- Migrated a C++/CGI web reporter to J2EE clustering, engineering an XSLT front-end and SQL backend for automated MFP data reporting

Technologies: Eclipse 3.1, IntelliJ IDEA 4.5, JDK 1.3/1.5, J2EE, JavaScript, JBoss 4.0.1, BEA WebLogic 9.0 (Beta), Apache HTTP Server, mod_jk, Tomcat 5.5, XML, XSLT, HTTP, JDOM, Altova XMLSpy 5, Macromedia Dreamweaver MX 2004, SQL, Firebird 1.51, MS Visio, Subversion (SVN) (+ Araxis Merge 6.5)

OPC Team Leader / Senior Developer | best solutions AG
June 2001 – October 2003 • Cologne, Germany / St. Petersburg, Russia

- Led a team developing OPC-based client/server components for process automation in chemical and pharmaceutical industries
- Architected NT services for OPC data acquisition, OPC address space mapping and test frameworks

Technologies: C++, VB, C#, COM/DCOM/COM+, ATL, OPC, STL, MFC, WTL, XML, Visual Studio .NET, MS Visual SourceSafe

IT Manager (Part-time) | Your Personnel JSC
January 2002 – December 2002 • St. Petersburg, Russia

- Managed recruitment workflows and technical screening interviews to source IT talent for specialized positions
- Maintained, updated and optimized the corporate web application infrastructure

Software Engineer / Client-Server Specialist | Loval JSC
September 1999 – May 2001 • St. Petersburg, Russia

- Designed secure browser integrated COM components for the remote data storage platform
- Implemented cryptographic protocols including digital certificates, public/private keys, and secure payload exchanges
- Co-authored a highly scalable Portable Component Architecture enabling objects to seamlessly bridge across distributed DCOM and CORBA platforms

Technologies: MS Visual C++ 6.0, Borland C++ Builder 4 and 5, Microsoft Windows CE Toolkit for Visual C++ 6.0, Microsoft Windows CE Platform Builder, VisiBroker 3.3 and 4, COM/DCOM/ATL, CORBA, MFC, XML, VSFlexGrid, RSA BSAFE Cert-C, RSA BSAFE Crypto-C, Perl, Rational Rose 2000, NuMega BoundsChecker 6, Assembler x86, MS Visual SourceSafe

Software Engineer | Star SPb JSC
March 1999 – September 1999 • St. Petersburg, Russia

- Architected database schemas and migration tools to seamlessly transfer core organizational data structures from FileMaker into MS SQL Server databases
- Programmed custom linguistic algorithms GUIs for the TRANSIT translation memory ecosystem

Technologies: Borland C++, OWL, Regex for Win32, Perl, InstallShield, SQL, MS Access 2000, MS SQL Server 7.0, MS VBA, MS Visual SourceSafe

Software Engineer | Sergey Vichrov Private Enterprise
December 1996 – February 1999 • St. Petersburg, Russia

- Developed advanced statistical forecasting suites to calculate real-time regression and correlation metrics for active traders
- Implemented robust database access abstraction layers via ODBC and DAO connections to process raw market data structures

Technologies: Visual C++, MFC, Borland C++, OWL, ODBC, DAO, MS Access, InstallShield, Clipper

CEO & Co-Founder | Yurmiko Ltd.
August 1994 – November 1996 • St. Petersburg, Russia

- Directed end-to-end corporate operations, client technical services, hardware/software infrastructure maintenance and managed corporate training programs

Programmer (Part-time) | Scientific Research Institute of Fireproof Materials
October 1993 – July 1994 • St. Petersburg, Russia

- Programmed and deployed a standalone payroll accounting system that streamlined monthly payroll processing constraints

Software Engineering Intern | Laboratory of Information and Measuring Systems (SPbSPU)
September 1993 – July 1994 • St. Petersburg, Russia

- Designed and coded a statistical distribution training simulation system used for academic and research workflows within the university

Projects details are available upon request.

TECHNICAL SKILLS

Languages: C/C++ (11/14/17), Python, C#, SQL, PL/SQL, Java, Shell/Bash, Xtend, Visual Basic, XML/XSLT, JSON, XAML, YAML
Embedded: efus, Raspberry Pi, ESP32, XAML/Silverlight for Embedded
Frameworks & Libraries: STL, Boost, MFC, ATL, OPC, COM/DCOM/COM+, CORBA, Xtext, pugixml, SOCI
Databases: Oracle, MS SQL Server, SQLite, MS Access; ODBC, OLE DB, ADO
Messaging: Telegram Bot API, MQTT, RabbitMQ
IDEs & Build: Visual Studio (6, 2008–2022), VS Code, Eclipse, IntelliJ IDEA
Source Control: Git, Subversion, Perforce, CVS
CI/CD: Jenkins, JetBrains TeamCity
Issue Tracking: Jira, BMC Remedy 7 ARS
OS: Windows 95/98/NT/2000/7/10/11 and CE, Linux (Buildroot, Ubuntu, Raspbian, Armbian, CentOS), Sun Solaris
Methodologies: Agile / Scrum, Waterfall, ITIL

EDUCATION

M.Sc. Computer Science — St. Petersburg State Polytechnical University (2003–2004)
Diploma in Software Engineering — St. Petersburg State Polytechnical University (1989–1995)

MBA Program (Credits earned) — University of Wales / Robert Kennedy College (2009–2011)

High School Diploma — Lyceum No. 239 specialized in Mathematics & Informatics, St. Petersburg, Russia (1987–1989)

LANGUAGES

English (Fluent) **German** (Very good) **Russian** (Native)