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## **Sergei Nikolaev, Ph.D.**

C++, Java, Numerical Algorithms and Big Data Specialist

San Jose, CA

- Developed core components of PayPal Trinity Platform — new real-time analytics platform
- Designed and implemented PayPal Data Access Objects (DAO) C++ library
- Developed PayPal Asynchronous Message Queues (AMQ) platform
- Wrote Hadoop-based buyer's behavior predictor at eBay
- Author of [CVM Class Library](#) — highly parallelizable computing platform for vectors and different types of matrices of real and complex numbers (open source project)
- Author of [Runge](#) — The Interactive Solver for Differential Equations
- Co-inventor of [U.S. Patent 8,150,847](#): System and method to transform results of client requests using client uploaded presentation formats

### **Experience**

#### **VMware, Inc.**

**2014 – present**

Member of Distributed Resource Management team. Reactive and proactive load balancing algorithms design, implementation and performance improvements. Environment: cross platform C++, Java.

#### **eBay, Inc.**

**2012 – 2014**

Design and implementation of algorithms processing big amounts of data (billions of user and transactions records) and large scale graphs (billions of vertices and edges). Environment: Hadoop, Apache Giraph, Teradata, MySQL, Java, Perl, PHP.

#### **PayPal, Inc.**

**2008 – 2012**

Developed core components of the Trinity Platform — new innovative platform delivering real time processing and analysis of big data. Later, as a member of Trinity Analytics team I designed and developed data analysis algorithms. Environment: J2EE, SAS, R, Esper, Eclipse, MySQL.

#### **PayPal, Inc.**

**2005 – 2007**

Designed and implemented PayPal core components and services. I was a lead developer of Data Access Objects library encapsulating database interactions which is now widely used by PayPal application developers. Developed Enqueuer component of PayPal Asynchronous Message Queues platform. I also was a lead developer of Java client for PayPal Application Service Framework - eBay successfully deployed this component for Next Generation Checkout flow providing great benefits for millions of eBay users. Environment: GCC, RHEL, J2EE, Oracle.

#### **eBay, Inc.**

**2003 – 2005**

eBay Developers Program is a new strategic direction of eBay's business allowing third party developers to create their own applications using API provided by eBay. My responsibilities included design and implementation of server side software components and services. Environment: IBM WebSphere 5.1, J2EE, SOAP, Java 2, MS Visual Studio .NET, XML, ISAPI.

**Ortega InfoSystems, Inc.****2002 – 2003**

FacilitySm@rt™ is a web-based software package allowing integration of heterogeneous security systems, software and hardware of an enterprise. I was responsible for core development of server-side modules, database interfaces and parts of web-based client. Environment included MS Visual Studio .NET, MFC, COM, DCOM, ActiveX, ASP, JScript, VBScript, ADO, MS SQL Server 2000, XML, ISAPI.

**Signature Bioscience, Inc.****2000 – 2002**

WaveScreen™ is a suite of software and hardware products which enables acquisition and analysis of PhenoDynamic data — the new drug discovery technology. My responsibilities included design and implementation of numerical algorithms processing and storing experimental data in a database, and design and development of the Material Interaction Analysis software module providing GUI for server-side computational sub-routines. Environment includes MS Visual C++, MS Visual Studio .NET, Compaq Visual Fortran, Rational Studio, MS SQL Server 2000, XML, ISAPI, MSMQ.

**Metabyte Networks, Inc.****2000**

I developed the interactive television system (**MbTV**). My responsibilities were fuzzy logic algorithm development, set-top box embedded programming and porting of C and C++ code from Linux to Win32 platform including POSIX threads library and Berkeley-style sockets related code. Environment: GNU C/C++, MS Visual C++, Linux, Win32.

**Argussoft Company, Russia****2000**

Back-end team manager. The project was the Customer Support Application for Neopost Online, Inc., USA. I was responsible for back-end software design and implementation and database design. Development environment: MS SQL Server 7.0, XML, Rational Rose 2000, MS Visual C++ 6.0 and COM+.

**Gradient, Inc., Russia****1991 – 1999**

Designed and implemented banking software, workflow systems and software development tools based on metadata concept. My responsibilities were project management, team management and software architecture. Environment included different versions of MS Visual C++, MS SQL Server, ODBC and COM.

**Research Computing Center of Moscow State University, Russia****1988 – 1991**

Designed and programmed algorithms for solving systems of differential equations (FORTRAN IV on БЭСМ-6 Supercomputer). These subroutines have been shipped with the Numerical Analysis Library published by the Center.

**Education****M.S. in Mathematics, Moscow State University, Moscow, Russia, 1991****Ph.D. in Mathematics, Udmurt State University, Izhevsk, Russia, 1998**

Postgraduate work at Department of Differential Equations: developed and implemented Optimal Control Theory numerical algorithms (FORTRAN, C++ and MATLAB).

**Interests**

Semi-pro photographer, see portfolio on [www.contax.me](http://www.contax.me).

All the references are available upon request.