Konstantin Ermakov,
Friedhofstr. 17a, 63263, Neu-Isenburg, Germany
Tel. ++49 179 469 5662

Curriculum Vitae

Name	Konstantin S. Ermakov
Address	Friedhofstr. 17a 63263, Neu-Isenburg, Germany
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Email	konstantin.ermakov@gmail.com
Family Status	Married
Children	Son, born 20.01.2003, Daughter, born 18.09.2006.

Education

09.1992-09.1999	St.Petersburg State University, Russia Faculty of Mathematics and Mechanics
Specialization	Numerical Methods in Mechanics, Monte Carlo Methods
Diploma Thesis	Solving the Navier-Stokes equations using the Monte Carlo Method
09.2006-09.2009	Frankfurt School Of Finance and Management, Frankfurt am Main, Germany
Specialization	Quantitative Finance
Diploma Thesis	Exotic Options Valuation using Monte Carlo Methods with collision estimator for the Heston Model

Professional Objective

A position which requires a qualification in the areas - Software Engineering, Quantitative Finance, Trading and Market Data Systems, Distributed and Parallel Computing, Numerical Methods, Monte Carlo Methods

Programming Languages

C/C++ (Expert Level), Java (Expert Level), MS Office (Excel, Access), SQL, PL-SQL, Perl, IDL, Scripting Languages (bash, ksh), XML, HTML, VBA

Operating Systems

Windows, Linux (Ubuntu, SuSe, Slackware), MS-DOS, Solaris

Exchange APIs

EUREX/XETRA VALUES, SWX MAPI, TIQS, FIX

Methods

OOA, OOD, UML, Extreme Programming & Rapid prototyping, Full SDLC (Software Development Lifecycle)

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Front Office

Advanced knowledge of the Exotic Derivative Pricing Models, experience in the area of implementation and integration the pricing libraries. Experience in the area of Migration and Integration of the Trading, Market Data and Pricing System.

Employment

Since 10.2009	1 PLUS I Software AG, Consultant
10.2005-09.2009	Quanteam AG, Eschborn Senior Consultant
04.2003-09.2005	BNP Paribas, Frankfurt, Central IT Developer
12.1999-04.2003	BNP Paribas Frankfurt, Capital Markets IT Developer
08.1998-11.1999	Sun Microsystems, QA Contractor

Project Experience

12.2009-now **Role**: Developer	*Implementation of the Excel Plugin for the Incremental Risk Charge (New Basel II Capital Requirements)* An investment bank requires a prototype of new model to fulfil the new Basel II requirements – Incremental Risk Charge. The proposed model was implemented according to the Credit Metrics and the Benchmark Model specification.
04.2009-09.2009 **Role**: Developer	*SFL – Small Financial Library* The Small Financial Library was implemented in C++ for the Master Thesis. The Different numerical schemes for exotic options valuation using the Heston Model were implemented – Andersen QE and TG schemes, Mixed PDE-Monte Carlo approach (estimator by collision). The library has a CORBA interface, which makes its possible to use within the distributed or parallel environment. For the demonstration of Monte-Carlo based parallelisation, the 6-nodes cluster was built.
02.2009-08.2009 **Role**: Developer	*Implementation of the different components for the Exotic Derivatives pricing system* An investment bank was building the in-house system for the exotic derivatives pricing. The task was to implement and extend the existing JBoss-based system with the following functionality: Swing-based GUI, Batch Processes in a three-tier architecture, Asynchronous server-side request processing.
07.2007-10.2008 **Role:** Developer	*Implementation of the calculation workflow in the Exotic Options Pricing System* An investment bank decided to replace an existing trading system with the in-house system based on the different technologies, i.e. Hibernate, Spring, and Platform Symphony. The task was to integrate

	the existing C++ pricing library in the Java middleware using the SWIG tool. The pricing processes were spread up on the cluster with approx. 1200 cores.
10.2005-11.2008 **Role**: Designer, Developer	*Design, Development and Support of the market data system* An investment bank required a system for the storage, monitoring and auditing the market data, i.e. volatility curves and dividends. With the new products and new requirements the system was migrated from the standalone application to the interactive EJB3 three-tier architecture. Additional functionality, as for example correlation of the historical market prices time series and the calibration for the Interest Rate models using the Reuters Quotes was implemented.
11.2005-11.2008 **Role**: Developer	*Excel Add-in for Derivatives Pricing* An investment bank required a solution for the pricing of exotic derivatives in Excel with the possibility to invoke the asynchronous processing on the cluster (Platform Symphony). For this solution the composition of different technologies was used, i.e. ManagedXLL and Microsoft Office PIAs connectivity involving both Managed C++ and the C++ code.
04.2003-10.2005 **Role**: Developer	*Support and Extending of the Oracle Database for the payment system.* For the existing payment system, which was used worldwide within a big investment bank there was a requirement to write additional modules using Oracle Forms and reports using Business Objects. Optimization of the Oracle DB Tables was done to improve the performance of existing SQL queries.
12.1999-04.2003 **Role**: Architect, Developer	*Development and Support of the Quoting machine for the Warrants Desk* An investment bank required to, develop, integrate and support the three-tier-based system for the warrants trading desk. The solution was able to communicate with the different exchanges, i.e. XETRA, SWX, EUWAX and CATS-OS. For the communication the CORBA technology was used. The front end was implemented using Stingray Objective Studio and MFC.
2002-2003 **Role**: Developer, Architect	*Grammar Parser Analyzer tool* To simplify the migration of the Front Office system the Grammar Parser Analyzer toolkit was developed. The objective was to give a developer a possibility to use the generated code and integrate it into the solution. The header files for the exchange API, for example, VALUES API, were used and, with the additional meta-descriptors the parts of the source code was generated. The tool was based on the PCCTS Grammar analyzer combined with the postprocessor written in Perl.
2001-2003 **Role**: Developer, Architect	*Eurex Back Office Solution* The application for the transfer of the clearing data and trade confirmations for the back office was developed. Additionally the migration from the User-Device architecture to the Miss-Architecture was performed.

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Publications

- **K.S. Ermakov**. Solving The Navier-Stokes equation using the Monte Carlo Method. *Polyakhov's readings, conference materials, 1997. ISSN 0135-180X*
- **K.S. Ermakov**. On the algorithm of the reverse sphere walk. *Proceedings of the 4th St.Petersburg Workshop on Simulation 2001. ISBN 5-7997-0304-9*
- **K.S. Ermakov**. On the method of reverse walk on the spheres for solving multidimensional wave equation. *Nonlinear dynamic Systems, Issue 3. St. Petersburg University Press, 2001, ISSN 1606-9854*
- **K.S. Ermakov**. On the numerical solution of the oscillation equation in the linear problems of thermo elasticity. *Nonlinear dynamic Systems, Issue 3. St. Petersburg University Press, 2001, ISSN 1606-9854*
- **K.S. Ermakov**. Monte Carlo method for the solution of wave equation. *The Book of Abstracts, MCM-2003: IVth IMACS Seminar on Monte Carlo Methods September 15- 19, 2003, Berlin.*